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AD-679 401

**A DDC BIBLIOGRAPHY ON
COMPUTERS IN INFORMATION SCIENCES**

(Information Sciences Series)

VOLUME II OF III VOLUMES

DDC-TAS-68-50

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DEC 24 1968

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P R E F A C E

Any discussion of information systems of the future predicts dynamic interactions between the user and the computer. This bibliography compiles references, cataloged by ODC since 1953, that deal specifically with the role of computers in the information sciences.

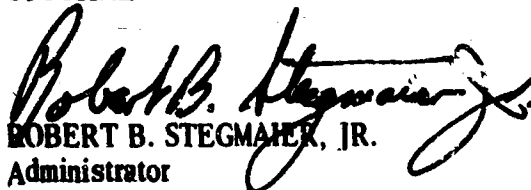
The 488 unclassified and unlimited references are divided into two volumes. Volume I contains 249 references grouped under two major headings: Time Shared, On-Line, and Real Time Systems; and Computer Components. Volume II contains 239 references grouped under three major headings: Artificial and Programming Languages, Computer Processing of Analog Data, and Computer Processing of Digital Data. These headings correspond directly with those of the Panel on Information Technology, Committee on Scientific and Technical Information, Federal Council for Science and Technology.

The references are arranged in accession number (AD number) sequence within each heading. Four indexes, AD-Numeric, Corporate Author/Monitoring Agency, Personal Author, and Contract, are appended for each volume to facilitate access to references.

An unclassified and limited version has been compiled and
will be announced in the Technical Abstract Bulletin (TAB).

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OFFICIAL

A handwritten signature in dark ink, appearing to read "Robert B. Stegmaier, Jr.", is written over the printed name.

ROBERT B. STEGMAIER, JR.
Administrator
Defense Documentation Center

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ARTIFICIAL AND PROGRAMMING LANGUAGES

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-259 782

PENNSYLVANIA UNIV PHILADELPHIA

THE TREATMENT OF AMBIGUITY AND PARADOX IN MECHANICAL
LANGUAGES

(U)

IV

GORN, SAUL

CONTRACT: AF49 628 951

MONITOR: AFOSR 603

UNCLASSIFIED REPORT

DESCRIPTORS: *CODING, *COMPUTERS, *DATA PROCESSING
SYSTEMS, *DATA STORAGE SYSTEMS, *DATA TRANSMISSION
SYSTEMS, *LANGUAGE, COMPLEX VARIABLES, FUNCTIONS, REAL
VARIABLES, SEQUENCES, THEORY (U)

A SUMMARY IS GIVEN OF THE BASIC DEFINITIONS OF THE
THEORY OF MECHANICAL LANGUAGES, AND OF THE MAIN
PROCESSORS FOR THE PREFIX LANGUAGES. A DISCUSSION
IS GIVEN OF LANGUAGE EXTENSION WITH THE EXAMPLES OF
HIERARCHIES OF EXTENSIONS IN PREFIX LANGUAGES. THE
RELATIONSHIP IS ESTABLISHED BETWEEN LANGUAGE
EXTENSION AND INCREASE IN CONTROL AMBIGUITY. A
LANGUAGE OF SYNTACTIC AMBIGUITY DESCRIPTIONS IS
DESIGNED AND THE EFFECTIVE PROCESSOR TRANSLATING FROM
THIS LANGUAGE TO THE DERIVED-LANGUAGE NAMING
LANGUAGE IS SPECIFIED. THE CONCEPTS OF RECOGNITION
DEPTH FOR BOTH SYNTACTIC AMBIGUITIES AND
ANALYZABILITY OF MECHANICAL LANGUAGES ARE DEVELOPED,
AND EXAMPLES ARE GIVEN TO SHOW THE EXISTENCE OF BOTH
TYPES AT ALL DEPTHS, INCLUDING INFINITE DEPTH.
EXAMPLES OF CONTROL AMBIGUITY ARE DEVELOPED RANGING
FROM THE EXTREMELY USEFUL TO THE PARADOXICAL.
AMONG THE PARADOXES ANALYZED IN THIS WAY ARE THE
EPI MENIDES PARADOX, THE LEWIS CARROLL
TORTOISE AND ACHILLES PARADOX, AND THE RUSSELL
PARADOX. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000369

AD-259 783

PENNSYLVANIA UNIV PHILADELPHIA

COMMENTS ON THE IMPLEMENTATION OF RECURSIVE
PROCEDURES AND BLOCKS IN ALGOL-60

(U)

IV IRONS, E.T. (FEURZEIG, W.)

CONTRACT: AF49 628 951

MONITOR: AFOSR TN60 1321

UNCLASSIFIED REPORT

DESCRIPTORS: *CODING, *COMPUTERS, *DATA PROCESSING
SYSTEMS, *DATA STORAGE SYSTEMS, *DATA TRANSMISSION
SYSTEMS, *PROGRAMMING (COMPUTERS), COMPLEX VARIABLES,
LANGUAGE, REAL VARIABLES, SEQUENCES (U)

BECAUSE OF THE IMPORTANCE, FROM THE THEORETICAL
POINT OF VIEW, OF RECURSIVE FUNCTIONS AND BECAUSE OF
THE GROWING EXTENT AND DIRECTION OF APPLICATION OF
RECURSION IN PROGRAMMING RESEARCH AND EXPERIMENTAL
MATHEMATICS, IT IS WORTH SOME EFFORT TO IMPLEMENT
RECURSION - GIVEN THAT THE COSTS IN COMPILATION AND
STORAGE REQUIREMENTS ARE NOT TOO GREAT. THE
MECHANISM FOR TREATING RECURSIVE PROCEDURES DESCRIBED
HERE IS SUCH THAT THE COSTS IN TIME AND STORAGE TO
PROCEDURES INVOLVED IN RECURSION ARE NO MORE THAN
NECESSARY FOR A COMPLETELY GENERAL RECURSION
MECHANISM FOR ALGOL 60. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-261 624

TECHNICAL OPERATIONS INC BURLINGTON MASS
AN ALGEBRAIC LANGUAGE FOR FLOW CHARTS

(U)

AUG 60 IV WARSHALL,STEPHEN

REPT. NO. B 60 22

CONTRACT: AF22 600 35190

UNCLASSIFIED REPORT

DESCRIPTORS: *ALGEBRA, *CODING, *PROGRAMMING
(COMPUTERS), ALGEBRAS, COMPUTERS, LANGUAGE, MATRIX
ALGEBRA

(U)

AN INFORMAL EXPOSITION IS GIVEN OF AN ALGEBRAIC LANGUAGE IN WHICH TO DESCRIBE FLOW CHARTS. THE ASSUMPTION BY MACHINES OF SOME OF THE PROGRAMMING TASKS STILL PERFORMED BY HUMANS - THE ISOLATION OF SUB-ROUTINES, THE DESIGN OF TEST PROBLEMS, THE ALLOCATION OF SECTIONS OF A PROCESS TO DIFFERENT CONTROLS OR STORAGE MEDIA, FOR EXAMPLE RESTS IN PART ON THE DEVELOPMENT OF ADEQUATE LANGUAGES IN WHICH TO INDICATE PROGRAM STRUCTURE. THERE IS, MOREOVER, POSSIBLE APPLICATION FOR SUCH LANGUAGES IN THE FORMAL SIMPLICATION AND ANALYSIS OF LARGE COMPUTER GAME (1) WHICH TO DESCRIBE FLOW CHARTS. THE ASSUMPTION BY MACHINES OF SOME OF THE PROGRAMMING TASKS STILL PERFORMED BY HUMANS - THE ISOLATION OF SUB-ROUTINES, THE DESIGN OF TEST PROBLEMS, THE ALLOCATION OF SECTIONS OF A PROCESS TO DIFFERENT CONTROLS OR STORAGE MEDIA, FOR EXAMPLE RESTS IN PART ON THE DEVELOPMENT OF ADEQUATE LANGUAGES IN WHICH TO INDICA

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-272 402

ITEN CORP WALTHAM MASS

AUTOMATIC WORD CODING TECHNIQUES FOR COMPUTER
LANGUAGE PROCESSING. SAMPLE RESULTS OF COMPUTER
TESTS

(U)

FEB 62

1V

NUGENT, WILLIAM R. IVEGH, ALEXANDER

REPT. NO. IL 9018 1 V2

CONTRACT: AF30 602 2377

UNCLASSIFIED REPORT

DESCRIPTORS: *CODING, *VOCABULARY, DIGITAL COMPUTERS,
LANGUAGE, PROGRAMMING (COMPUTERS), TABLES (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-273 759

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD
MASS

USE OF A LIST-PROCESSING LANGUAGE IN PROGRAMMING
SIMPLIFICATION PROCEDURES

IV PETRICK, S.R.I

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER LOGIC, *COMPUTER STORAGE
DEVICES, *DATA STORAGE SYSTEMS, *LANGUAGE, CODING,
MACHINES, PROGRAMMING (COMPUTERS), SWITCHING
CIRCUITS

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-281 864

INTERNATIONAL BUSINESS MACHINES CORP SAN JOSE CALIF
ADAPT, A SYSTEM FOR THE AUTOMATIC PROGRAMMING OF
NUMERICALLY CONTROLLED MACHINE TOOLS ON SMALL
COMPUTERS. (U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL ENGINEERING REPT. 19
JAN-15 JUL 62,

JUL 62 170P JEANS, H. SINANIAN, E. J.

CONTRACT: AF 33(600)-93369

PROJ: AF-7-870

MONITOR: ASD TR-62-7-870(XV)

UNCLASSIFIED REPORT

DESCRIPTORS: *CONTROL, *PROGRAMMING (COMPUTERS),
AUTOMATION, DIGITAL COMPUTERS, LANGUAGE, MACHINE TOOL (U)

THE ADAPT SYSTEM IS AN AUTOMATIC PROGRAMMING
SYSTEM FOR NUMERICALLY CONTROLLED MACHINE TOOLS.
ITS LANGUAGE IS ENGLISH-LIKE AND PROBLEM-ORIENTED
AND IS COMPATIBLE WITH APT LANGUAGE. DEVELOPMENT
FOR USE WITH SMALL DIGITAL COMPUTERS, ADAPT HAS
FULL TWO-DIMENSIONAL GEOMETRIC CAPABILITIES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-784 680

RLND CORP SANTA MONICA CALIF

FORTAB: A DECISION TABLE LANGUAGE FOR SCIENTIFIC
COMPUTING APPLICATIONS

(U)

IV

ARMERDING, G.W. I

UNCLASSIFIED REPORT

DESCRIPTORS: •LANGUAGE, •PROGRAMMING (COMPUTERS),
DIGITAL COMPUTERS, SCIENTIFIC RESEARCH

FORTAB IS A DECISION TABLE LANGUAGE BASED ON THE
FORTRAN SCIENTIFIC COMPUTING LANGUAGE. PROGRAMS
WRITTEN IN THE COMBINED FORTAB AND FORTRAN
LANGUAGES CAN BE COMPILED BY A FORTAB PRE-
PROCESSOR PROGRAM WHICH WAS CONSTRUCTED FOR THE IBM
7090 COMPUTER. INITIAL EXPERIMENTS CONDUCTED
USING THE FORTAB LANGUAGE INDICATE THAT A DECISION
TABLE LANGUAGE ADDED TO A SCIENTIFIC COMPUTING
LANGUAGE RESULTS IN A POWERFUL COMBINATION OF
PROGRAMMING TOOLS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-289 831

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

JOVIAL AND ITS DOCUMENTATION

(U)

OCT 62

IV

SHAW, CHRISTOPHER J. I

REPT. NO. SP 1012

UNCLASSIFIED REPORT

DESCRIPTORS: PROGRAMMING (COMPUTERS),

BIBLIOGRAPHIES, DIGITAL COMPUTERS, LANGUAGE

(U)

JOVIAL IS DESCRIBED AS A GENERAL PURPOSE, PROCEDURE-ORIENTED, AND LARGELY COMPUTER-INDEPENDENT PROGRAMMING LANGUAGE INTENDED PRIMARILY FOR PROFESSIONAL PROGRAMMERS. JOVIAL WAS DESIGNED AND IMPLEMENTED BY SDC TO PRODUCE PROGRAMS FOR LARGE, COMPUTER-BASED, MILITARY COMMAND AND CONTROL SYSTEMS. A SHORT HISTORY OF JOVIAL'S COMPILER DESIGN AND A SELECTED BIBLIOGRAPHY ARE GIVEN. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-293 106

PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF
ELECTRICAL ENGINEERING

ASO EXECUTIVE ROUTINE

(U)

NOV 62 IV

PERRY, BENSONI

REPT. NO. 62 14

CONTRACT: NONR55140

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, *INFORMATION
RETRIEVAL, *PROGRAMMING (COMPUTERS), COMPUTERS,
CONFIGURATION, DESIGN, DISPLAY SYSTEMS, SIMULATION,
THEORY

(U)

A PILOT MODEL OF A REAL-TIME INFORMATION STORAGE
AND RETRIEVAL SYSTEM WAS CONSTRUCTED. SEVERAL
FILES ARE STORED IN A LARGE, INTERMEDIATE SPEED,
RANDOM ACCESS STORAGE DEVICE WHICH IS AN IBM 1405
DISK FILE. ASSOCIATED WITH THIS FILE ARE TREES
(HIERARCHICAL INDEX FILES) AND VARIOUS PROGRAMS
THAT ARE NEEDED TO RETRIEVE, STORE OR UPDATE
THE INFORMATION FILES. THESE ARE ALSO STORED ON
THE DISK. THE METHOD USED TO ACCESS THE FILES BY
TRACING ONE OR MORE KEYS THROUGH THE TREES IS THE
MULTI-LIST TECHNIQUE. ALL INFORMATION TO AND
FROM THE 1405 DISK PASSES THROUGH AN IBM 1401
PROCESSOR WHICH ALSO DOES ALL OF THE ACTUAL
PROCESSING. A DIAGRAM REPRESENTING THE SYSTEM IS
GIVEN. ONE OF THE IMPORTANT FEATURES IN THE SYSTEM
IS THE DIVISION OF PROGRAMS INTO TWO PRIORITIES WITH
THE ABILITY TO INTERRUPT A LOW PRIORITY PROGRAM WITH
A HIGH PRIORITY ONE. THE HIGH PRIORITY IS RESERVE
FOR PROGRAMS THAT PROVIDE IMMEDIATE, LOW VOLUME
OUTPUT IN RESPONSE TO INQUIRIES REGARDING THE FILES.
CERTAIN FEATURES, ORIGINALLY PLANNED FOR THE
EXECUTIVE ROUTINE, WERE OMITTED BECAUSE OF THE
LIMITATIONS OF THE 1401 SYSTEM AVAILABLE. IN
PARTICULAR, THE SMALL MEMORY (800 CHARACTER TOTAL,
2000 CHARACTERS FOR THE EXECUTIVE ROUTINE)
LIMITING FACTOR. SOME DETAILS OF THE ORIGINALLY
PROPOSED EXECUTIVE ROUTINE ARE APPENDED.
(AUTHOR)

(U)

UNCLASSIFIED

000289

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-296 046

RAND CORP SANTA MONICA CALIF

PROGRAMMING LANGUAGES AND STANDARDIZATION IN COMMAND
AND CONTROL (U)

JAN 62 67P HAVERTY, J.P. (PATRICK, R.L.)

REPT. NO. RM-3447-PR

CONTRACT: AF 49(628)-700

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA PROCESSING SYSTEMS, *PROGRAMMING
LANGUAGES, COMMAND + CONTROL SYSTEMS, COSTS, DESIGN,
MANAGEMENT ENGINEERING, MEASUREMENT, PROGRAMMING
(COMPUTERS), STANDARDIZATION, TRAINING (U)

ASSESSMENT OF THE STATE OF THE ART IN PROGRAMMING
LANGUAGES AND DISCUSSION OF THE CONSEQUENCES OF
STANDARDIZING ON A PROGRAMMING LANGUAGE.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-408 969

NAVAL RESEARCH LAB WASHINGTON D C

NELIAC-N: A TUTORIAL REPORT,

(U)

JUN 63 140P KALLANDER, J.W. I

THATCHER, R.M. I

REPT. NO. NRL-5976, NAREC-REF-29

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES, MATHEMATICS), PROGRAMMING PUTERS), COMPUTERS, ALGEBRAS, DATA STORAGE SYSTEMS, COMPUTER LOGIC.

(U)

IDENTIFIERS: NELIAC-N.

(U)

A TUTORIAL DESCRIPTION OF NELIAC-N, THE VERSION OF THE NELIAC LANGUAGE IMPLEMENTED ON THE NAREC BY MEANS OF THE NELIAC-N COMPILER IS PRESENTED. NELIAC IS A PROBLEM-ORIENTED, MACHINE-INDEPENDENT PROGRAMMING LANGUAGE WHICH ENABLES PROGRAMMERS, SCIENTISTS, AND ENGINEERS TO WRITE THEIR PROGRAMS IN A MATHEMATICAL LANGUAGE RATHER THAN REQUIRING AN ACTUAL MACHINE LANGUAGE OR AN ASSEMBLY LANGUAGE. NELIAC THUS MINIMIZES THE KNOWLEDGE OF THE ACTUAL COMPUTER REQUIRED BY THE PROGRAMMER, MAXIMIZES THE READABILITY OF THE PROGRAMS THEMSELVES, AND PROVIDES CARRY-OVER VALUE OF PROGRAMS FROM ONE COMPUTER TO ANOTHER. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-415 797

RAND CORP SANTA MONICA CALIF

TECHNICAL APPENDIX ON THE SIMSCRIPT SIMULATION
PROGRAMMING LANGUAGE.

(U)

AUG 63

15P

HAUSER, BERNARD I

MARKOWITZ, HARRY M. I

REPT. NO. MEMO. RM2813PR

CONTRACT: AF49 (28 700

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGE, SIMU
LATION), LOGISTICS, MANUFACTURING METHODS,
COMPUTERS.

(U)

IDENTIFIERS: SIMSCRIPT, PRINT OUT, 1963.

(U)

THIS PAPER PRESENTS MATERIAL WHICH CAN BE OF VALUE
IN ADVANCED APPLICATIONS OF SIMSCRIPT. SIMSCRIPT IS
A PROGRAMMING LANGUAGE WHICH WAS ESPECIALLY DEVELOPED
TO REDUCE THE TIME REQUIRED TO INITIALLY CODE AND
SUBSEQUENTLY MODIFY SIMULATION PROGRAMS. IT HAS
BEEN USED IN THE SIMULATION OF A WIDE VARIETY OF
SYSTEMS INCLUDING LOGISTICS, MANUFACTURING AND
COMPUTER OPERATIONS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-419 103

PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF
ELECTRICAL ENGINEERING

A SYNTAX-ORIENTED COMPILER FOR LANGUAGES WHOSE
SYNTAX IS EXPRESSIBLE IN BACKUS NORMAL FORM, AND SOME
PROPOSED EXTENSIONS THERETO, (U)

MAY 63 IV INGERMAN, PETER ZILAHY :

CONTRACT: AF49 628 951 ,DA31 124AROD98

MONITOR: AROD 416611

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (*COMPILERS, PROGRAMMING
LANGUAGES), (*PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), PROGRAMMING (COMPUTERS),
CODING, FUNCTIONS, COMPUTER STORAGE DEVICES,
OPERATORS (MATHEMATICS), INPUT-OUTPUT
DEVICES, CONTROL SEQUENCES, TABLES. (U)

IDENTIFIERS: SET THEORY, 1967. (U)

A SYNTAX-ORIENTED COMPILER FOR LANGUAGES WITH A
CONTEXT-FREE SYNTAX EXPRESSED IN BACKUS NORMAL
FORM IS DISCUSSED. THE TECHNIQUE DISCUSSED IS
APPLICABLE TO AN ITERATED COMPILATION PROCESS, WHERE
EACH PHASE OF THE COMPILATION GENERATES THE RULES OF
SYNTAX REQUIRED FOR THE NEXT PHASE OF THE
COMPILATION. COMPLETE FLOW CHARTS ARE INCLUDED FOR
THE MAJOR PROCESSORS; THESE FLOW CHARTS ARE
ESSENTIALLY MACHINE-INDEPENDENT. ALSO INCLUDED IS A
DISCUSSION OF THE EXTENSIONS REQUIRED WHICH ALLOW THE
COMPILATION TECHNIQUE TO BE EXTENDED TO CONTEXT-
DEPENDENT SYNTAX, ALTHOUGH A NON-TERMINATING
COMPILATION MAY RESULT IN CERTAIN CASES IF THESE
EXTENSIONS ARE INCLUDED. THE GENERAL TECHNIQUE IS
THEREFORE NOT ONLY SHOWN TO BE EXTENDABLE, BUT IS
ALSO SHOWN TO FACILITATE THE COMPARISON OF LANGUAGES, SINCE
THE IDIOSYNCRACIES OF INDIVIDUAL COMPILERS CAN BE
ELIMINATED FROM THE COMPARISON. (AUTHOR) (U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-419 580

NAVAL RESEARCH LAB WASHINGTON D C

A PROGRAM FOR THE EXECUTION OF LGP-30 MACHINE
LANGUAGE CODES ON THE NAREC COMPUTER, (U)

MAY 62 107P

WALD, ELIZABETH E. I WALD, B. I

REPT. NO. NRL-5919

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING (COMPUTERS)),
(*PROGRAMMING LANGUAGES), CODING, DIGITAL COM
PUTERS, SIMULATION. (U)

IDENTIFIERS: 1962. (U)

IN ORDER TO ALLOW THE UTILIZATION OF DIGITAL COM
PUTER PROGRAMS WRITTEN FOR THE LGP-30 COMPUTER BY
AN ORGANIZATION WHICH NO LONGER HAD CONVENIENT
ACCESS TO THIS MACHINE, A PROGRAM WAS WRITTEN FOR
NAREC, THE NRL GENERAL PURPOSE COMPUTER, WHICH
CAUSES NAREC TO SIMULATE THE ACTIONS OF AN LGP-
30. ALTHOUGH THIS PROGRAM WAS WRITTEN OUT OF NECES
SITY, THE SIMULATION SPEED GAIN IS SUFFICIENTLY HIGH
TO MAKE THE SIMULATION OF LGP-30 OPERATIONS MORE
ECONOMICAL THAN DIRECT EXECUTION FOR MANY CLASSES OF
PROBLEMS. A MORE COGENT ARGUMENT FOR THE
UTILIZATION OF SIMULATION IS TO FREE NRL'S LGP-
30'S FROM PRODUCTION WORK AND ALLOW THEM TO BE USED
IN CLOSE SUPPORT OF RESEARCH. THE SIMULATOR
UTILIZES THE LGP-30 INSTRUCTIONS IN AN IN
TERPRETIVE MODE TO INVOKE SUBROUTINES OR ACTION
BLOCKS TO PERFORM ON THE SIMULATED LGP-30 MEMORY,
REGISTERS, AND INPUT-OUTPUT DEVICES THE SAME ACTIONS
THAT WOULD HAVE BEEN PERFORMED BY AN ACTUAL LGP-30
EXECUTING THESE INSTRUCTIONS. ONE YEAR OF
OPERATING EXPERIENCE WITH THE SIMULATOR HAS
DEMONSTRATED THAT WHILE THERE CERTAINLY EXIST BETTER
WAYS OF PROVIDING INTERCHANGEABILITY BETWEEN
COMPUTERS, E.G., BY NOT PROGRAMMING IN MACHINE-
ORIENTED LANGUAGE, IT IS PRACTICAL TO USE THE ACTUAL
MACHINE CODING OF A PROBLEM WRITTEN FOR A SMALL
COMPUTER AS THE CONTROL FOR A LARGER COM PUTER
RUNNING AN INTERPRETIVE PROGRAM. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-420 194

COMPUTER ASSOCIATES INC WOBURN MASS
CL-11 PROGRAMMING SYSTEM IBM 7090 VERSION. PROGRAM
DESCRIPTIONS, VOLUME 1. APPENDIX B. CONTROL NAMES
AND EQUIVALENCES.

(U)

APR 63 SOP

REPT. NO. CA62 1SD

CONTRACT: AF49 628 1187

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PROGRAMMING (COMPUTER), DIGITAL
COMPUTERS), (PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS)

(U)

IDENTIFIERS: IBM 7090, 1962

(U)

CONTENTS: COMBINED LISTS OF CONTROL
PARAMETERS, ROUTINES, DATA SETS, DATA SET
ELEMENTS, MASKS, AND CONSTANTS (ALPHABETIZED
BY NAME AND GIVING EQUIVALENCES AND CATEGORIES);
LIST OF CONTROL PARAMETERS (ALPHABETIZED BY
NAME AND GIVING EQUIVALENCES AND INITIAL VALUES, IF
ANY); LIST OF CONTROL DATA SETS AND DATA
SET ELEMENTS (ALPHABETIZED BY NAME AND GIVING
EQUIVALENCES AND LIST ALLOCATIONS); LIST OF
CONTROL ROUTINES (ALPHABETIZED BY NAME AND
GIVING EQUIVALENCES AND SENTENCE DESCRIPTIONS); AND
LIST OF CONTROL CONSTANTS AND MASKS
(ALPHABETIZED BY NAME AND GIVING EQUIVALENCES AND
VALUES).

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-420 489

COMPUTER ASSOCIATES INC WOBURN MASS
CL-II PROGRAMMING SYSTEM IBM 7090 VERSION PROGRAM
DESCRIPTIONS VOLUME 2. INITIALIZATION. (U)
IV

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PROGRAMMING LANGUAGES, THEORY),
COMPUTERS (U)
IDENTIFIERS: 1962, ROUTINES (U)

INITIALIZATION IS THAT PART OF THE CL-II
PROGRAMMING SYSTEM WHICH BRINGS INTO MEMORY THOSE
PROGRAMS AND DATA SETS REQUIRED TO BEGIN A CL-II
RUN. THE CL-II PROGRAMMING SYSTEM MAINTENANCE
MANUAL CONTAINS GROSS FLOWS OF INITIALIZATION AND
FURTHER EXPLAINS THE ROLE OF INITIALIZATION IN THE
OVERALL CL-II SYSTEM. THIS VOLUME CONTAINS
DETAILED SPECIFICATIONS AND FLOWCHARTS FOR ALL OF
INITIALIZATION. THE VOLUME IS DIVIDED INTO PARTS
(PART I -- DATA SET DESCRIPTIONS; PART
II -- ROUTINE DESCRIPTIONS) AND INCLUDES AS
APPENDIX A A DISCUSSION OF THE NOTATION AND
FLOWCHART CONVENTIONS UTILIZED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-420 987

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO

IMPROVEMENT OF AFIT 1620 FORTRAN,

AUG 62 194P ROGER PEPIN, GERARD J

(U)

HERIN, FRANK EARL, JR.:

MONITOR: AFIT

GE EE62 12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (•DATA PROCESSING SYSTEMS, PROGRAMMING
(COMPUTERS), (•PROGRAMMING (COMPUTERS), ANALYSIS),
(•PROGRAMMING LANGUAGES), DESIGN, SCIENTIFIC RESEARCH,
COMPUTERS, PROGRAMMING LANGUAGES (U)

IDENTIFIERS: 1962, IBM 1620, MODIFICATIONS, FORTRAN,
AFIT PROGRAM, FORGO (U)

THE AFIT FORTRAN PROCESSOR PROGRAM IS EXAMINED
AND MODIFIED TO INCLUDE THE USE OF THE DIRECT
ADDRESSING, AUTOMATIC DIVIDE, MOVE FLAG,
TRANSFER NUMERIC STRIP, AND TRANSFER
NUMERIC FILL FEATURES OF THE IBM 1620 DATA
PROCESSING SYSTEM. TO FURTHER IMPROVE THE
OBJECT TIME OF COMPILED PROGRAMS, NECESSARY
MODIFICATIONS TO INSURE COMPATIBILITY WITH THE FORGO
PROCESSOR ARE INCLUDED AND ADDITIONAL PROGRAMMING
FEATURES NOT PRESENTLY AVAILABLE WERE INCORPORATED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-421 913

NAVAL ORDNANCE LAB WHITE OAK MD
FNOL2. A FORTRAN (IBM 7090) SUBROUTINE FOR THE
SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS WITH
AUTOMATIC ADJUSTMENT OF THE INTERVAL OF
INTEGRATION. (U)

28P LINNEKIN, JERRY S. :

BELLIVEAU, L. J. :

MONITOR: NOL TR69 171

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIFFERENTIAL
EQUATIONS), (*DIFFERENTIAL EQUATIONS, PROGRAMMING
LANGUAGES), (*PROGRAMMING (COMPUTERS), NUMERICAL
METHODS AND PROCEDURES), INTEGRATION (U)
IDENTIFIERS: 1962, FNOL2, IBM 7090 (U)

FNOL2 IS A FORTRAN SUBROUTINE USED FOR THE
NUMERICAL INTEGRATION OF A SYSTEM OF UP TO 30
ORDINARY DIFFERENTIAL EQUATIONS. IT USES DOUBLE
PRECISION ARITHMETIC IN KEY LOCATIONS. FNOL2 HAS
THE OPTION OF AUTOMATICALLY VARYING THE INTERVAL OF
INTEGRATION, H, TO HOLD THE RELATIVE OR ABSOLUTE
TRUNCATION ERROR WITHIN BOUNDS FIXED BY THE USER. A
FORTRAN LISTING OF THE SUBROUTINE IS INCLUDED IN
THIS REPORT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-421 979

RAND CORP SANTA MONICA CALIF

TIPL, TEACH INFORMATION PROCESSING LANGUAGE, (U)

OCT 63 28P DUPCHAK, ROBERT I

REPT. NO. RM2879PR

CONTRACT: AF49 628 700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS),
EFFECTIVENESS), (*PROGRAMMING LANGUAGES, COMPUTERS),
(*INSTRUCTION MANUALS, PROGRAMMING LANGUAGES) (U)
IDENTIFIERS: 1963, TIPL (TEACH INFORMATION PROCESSING
LANGUAGE) (U)

TIPL IS A SYSTEM TO ASSIST STUDENTS IN LEARNING
IPL-V, A LIST-PROCESSING COMPUTER LANGUAGE, AND IS
USED IN CONJUNCTION WITH THE PROBLEMS CONTAINED IN
THE INFORMATION PROCESSING LANGUAGE-V
MANUAL. IT ACCEPTS AS INPUT A STUDENT'S PROGRAM
AND IT PROCEEDS TO CHECK THE CORRECTNESS OF THE
PROGRAM. THE FIRST SECTION OF THIS MEMORANDUM IS
INTENDED FOR THE STUDENT. IT DESCRIBES HOW HE MUST
PREPARE HIS PROGRAM DECK AND WHAT CONVENTIONS HE MUST
OBSERVE. THE SECOND SECTION DESCRIBES HOW THE
SYSTEM OPERATES AND THE MANNER IN WHICH THE
INSTRUCTOR MAY MODIFY OLD PROBLEMS AND ADD NEW ONES.
SINCE TIPL IS WRITTEN ENTIRELY IN IPL-V, IT
REQUIRES ONLY MINIMAL EFFORT TO INCORPORATE IT INTO
ANY IPL-V PROCESSOR. THOSE INTERESTED IN
OBTAINING TAPE COPIES OF THE PROGRAM SHOULD WRITE
THE RAND CORPORATION FOR FURTHER INFORMATION.
THE PROGRAM IS WRITTEN ON IBM TAPE AS A SINGLE
FILE OF BCD CARD IMAGES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-422 258

RAND CORP SANTA MONICA CALIF

A COMPARISON OF LIST-PROCESSING COMPUTER LANGUAGES,

(U)

OCT 63 37P

BOBROW, DANIEL G. ;

RAPHAEL, BERTRAM ;

REPT. NO. RM3842PR

CONTRACT: AF49 628 700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DATA PROCESSING
SYSTEMS), (*METAMATHEMATICS, ANALYSIS), SEQUENCES,
DIGITAL COMPUTERS, DATA STORAGE SYSTEMS,
DOCUMENTATION

(U)

IDENTIFIERS: COMIT, IPL-V, LISP 1.5, SLIP, 1963

(U)

A DETAILED COMPARISON IS PRESENTED OF COMIT, IPL-V, LISP 1.5, AND SLIP-FOUR WELL-KNOWN COMPUTER PROGRAMMING LANGUAGES WHICH, AMONG THEM, EXHIBIT ALL THE PRINCIPAL CHARACTERISTICS OF EXISTING LIST-PROCESSING LANGUAGES. IMPORTANT COMMON FEATURES OF LIST-PROCESSING LANGUAGES ARE REVIEWED: FORMS OF DATA STRUCTURES WHICH ARE MANIPULATED; NECESSITY FOR DYNAMIC ALLOCATION OF STORAGE; USE OF PUSHDOWN STORES; AND USE OF RECURSIVE OPERATIONS. PRINCIPAL DIFFERENCES BETWEEN THE FOUR LANGUAGES UNDER CONSIDERATION ARE DETAILED: REPRESENTATIONS OF DATA, BOTH BY THE PROGRAMMER AND WITHIN THE MACHINE; METHODS FOR STORAGE ALLOCATION; PROGRAMMING FORMALISMS AND SPECIAL PROCESSES AVAILABLE, INCLUDING ARITHMETIC FACILITIES; AND USABILITY IN TERMS OF AVAILABILITY, DOCUMENTATION, LEARNING AIDS, AND DEBUGGING FACILITIES. FINALLY, THE AUTHORS GIVE SOME HEURISTICS TO AID IN THE SELECTION OF ONE OF THESE LANGUAGES FOR USE IN PARTICULAR PROBLEM APPLICATIONS, CONCLUDING THAT NO ONE OF THE LANGUAGES CONSIDERED IS DISTINCTLY SUPERIOR OVER ALL POSSIBLE LIST-PROCESSING APPLICATIONS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-428 726

IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
THE LOGIC DESIGN OF ADAM, A PROBLEM-ORIENTED SYMBOL
PROCESSOR PROGRAMMING MANUAL. APPENDIX I. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 62 79P SCHAUER, R. F. MULLERY, A. P.

CONTRACT: AF19 628 1621
PROJ: 4641
TASK: 464105
MONITOR: AFRL 62 SID

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), INSTRUCTION
MANUALS), (*MATHEMATICAL LOGIC, DESIGN), (*PROGRAMMING
LANGUAGES, INFORMATION RETRIEVAL), DATA, VERBAL
BEHAVIOR, INPUT-OUTPUT DEVICES, ERRORS, THEORY, DATA
PROCESSING SYSTEMS, CODING, TEST METHODS (U)
IDENTIFIERS: ADAM, LOGIC DESIGN (U)

THIS MANUAL PRESENTS THE CODING TECHNIQUES WHICH
WILL BE USED TO PREPARE PROBLEMS FOR SOLUTION ON
ADAM, AN EXPERIMENTAL DIGITAL DATA HANDLING SYSTEM.
THE PROBLEM WAS TO DESIGN A COMPUTER CAPABLE OF
MANIPULATING A BROAD RANGE OF DATA FORMS. DATA WAS
STRUCTURED TO INCLUDE INSTRUCTIONS IN SUCH A WAY THAT
THEY MAY BE COMPLETELY VARIABLE IN LENGTH. THE
MACHINE WOULD ALSO HAVE A LARGE CHARACTER SET SO
THAT VARIOUS CHARACTERS COULD BE ASSIGNED TO SPECIFIC
HARDWARE FUNCTIONS AND STILL LEAVE A SUFFICIENT
NUMBER TO BE USED AS GENERAL CHARACTERS FOR SYMBOLIC
NAMES AND DATA REPRESENTATION. ADAM HAS A
CHARACTER SET WITH 128 ASSIGNED CHARACTERS (THOSE
ASSIGNED TO HARDWARE FUNCTIONS) AND 128 GENERAL
CHARACTERS. EXAMPLES HAVE BEEN ABUNDANTLY USED IN
THIS MANUAL SO THAT THE READER MAY EASILY VISUALIZE
THE PERFORMANCE OF EACH OF THE MACHINE FUNCTIONS AS
IT IS EXPLAINED. ONE OF THE DANGERS OF GIVING
EXAMPLES, HOWEVER, IS THAT THE READER MIGHT LIMIT HIS
CONCEPT OF THE FUNCTION BEING DISCUSSED TO THE
SPECIFIC USE BEING ILLUSTRATED. THIS IS NOT OUR
INTENTION HERE, ESPECIALLY SINCE IT IS FELT THAT ONLY
BY USING THE BROADEST INTERPRETATION OF EACH FUNCTION
IS IT POSSIBLE TO OBTAIN THE FULL POWER OF THE
MACHINE AND ITS LANGUAGE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-422 490

COLUMBIA UNIV DOBBS FERRY N Y HUDSON LABS
COMPUTER PROGRAM REFERENCE MANUAL OF THE HUDSON
LABORATORIES COMPUTING FACILITY VOLUME II, PART II
LISTINGS OF BASIC UTILITY PROGRAMS, (U)
MAY 62 106P KLERER, MELVIN I
REPT. NO. NO. 110 ,CU122 62
CONTRACT: NONR26684

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, HANDBOOKS),
(*PROGRAMMING (COMPUTERS), HANDBOOKS) (U)
IDENTIFIERS: 1962, SUBROUTINES (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-422 491

COLUMBIA UNIV DOBBS FERRY N Y HUDSON LABS
COMPUTER PROGRAM REFERENCE MANUAL OF THE HUDSON
LABORATORIES COMPUTING FACILITY,

(U)

MAY 62 72P KLERER, MELVIN I

REPT. NO. 111 CU122 62

CONTRACT: NONR26684

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, HANDBOOKS),

(*PROGRAMMING (COMPUTERS), HANDBOOKS)

(U)

IDENTIFIERS: 1962, SUBROUTINES

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-424 760

TELEDYNE SYSTEMS CO HAWTHORNE CALIF

AUTOMATIC PROGRAMMING TECHNIQUES (PHASE I)

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

FEB 64 191P

GILBERT, P. HOSLER, J. ;

EARNEST, C. ;

CONTRACT: AF30 602 2924

PROJ: 5581

TASK: 558102

MONITOR: RADC

TDR63 563

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), DATA
PROCESSING SYSTEMS), (*PROGRAMMING LANGUAGES, CONTROL
SYSTEMS)

(U)

IDENTIFIERS: (*PROGRAMMING (COMPUTERS), DATA
PROCESSING SYSTEMS), (*PROGRAMMING LANGUAGES,
CONTROL SYSTEMS)

(U)

THE PROBLEM OF AUTOMATIC (PROGRAM) GENERATION
OF COMPILERS WAS STUDIED: A COMPILER GENERATION
SYSTEM WAS SPECIFIED, CONSISTING OF TWO PARTS: A
'GENERATION PROGRAM' AND A 'COMPILER MODEL'. USING
THIS SYSTEM, A COMPILER IS GENERATED FOR A GIVEN
LANGUAGE IN THE FOLLOWING MANNER: AN ABSTRACT
SPECIFICATION OF THE LANGUAGE IS WRITTEN, USING THE
METHODS AND NOTATION DEVELOPED IN CONJUNCTION WITH
THE SYSTEM. THIS SPECIFICATION IS INPUT TO THE
'GENERATION PROGRAM', WHICH PERFORMS CHECKS ON THE
SPECIFICATION TO INSURE ITS CORRECTNESS, AND THEN
DERIVES A SET OF DATA TABLES FROM THE SPECIFICATION.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-447 491

AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX
SLIP PRELIMINARY INSTRUCTIONAL MANUAL,
AUG 64 120P ATKINSON, GEORGE W. I
REPT. NO. TDR64 98

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, HANDBOOKS),
(*PROGRAMMING (COMPUTERS), HANDBOOKS), COMPUTER LOGIC,
DATA PROCESSING SYSTEMS (U)

SLIP IS A COLLECTION OF A HUNDRED SUBROUTINES WHICH
ENABLES THE PROGRAMMER TO USE LIST PROCESSING
TECHNIQUES WITHIN A FORTRAN SYSTEM, IN THIS CASE
FORTRAN 63. SLIP IS AN ACRONYM FOR SYMMETRIC
LIST PROCESSOR, A SYSTEM DEVELOPED BY JOSEPH
WEIZENBAUM OF THE GENERAL ELECTRIC COMPUTER
LABORATORY. IN THIS SYSTEM, EACH LIST CELL
CONTAINS BOTH A LINK TO THE PRECEDING CELL AND A LINK
TO THE SUCCEEDING CELL. THIS PRELIMINARY
INSTRUCTION MANUAL IS INTENDED AS A GUIDE TO THE
PROGRAMMER TO ENABLE HIM TO USE THE SLIP SYSTEM AS
MODIFIED FOR FORTRAN 63. EACH SUBROUTINE IS
PRESENTED ALONG WITH AN EXPLANATION OF ITS USE.
RELEVANT EXPLANATIONS OF THE SLIP SYSTEM ARE
ADDED AS THE VARIOUS SUBROUTINES ARE ENCOUNTERED.
THE SLIP SYSTEM IS NOW OPERATIONAL ON
KIRTLAND'S 1604 COMPUTER AND THE SUBROUTINES HAVE
BEEN ADDED TO THE FORTRAN 63 LIBRARY TAPE.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-465 935

FRANK J SEILER RESEARCH LAB UNITED STATES AIR FORCE
ACADEMY COLO

'SLASH' ALGOL SIMULATED HYBRID COMPUTER, (U)

MAY 65 205P

FUNK, JAMES E. I

REPT. NO. SRL-65-1

PROJ: AF-7904

TASK: 790400

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ANALOG
COMPUTERS), DIGITAL COMPUTERS, SIMULATION,
DIFFERENTIAL EQUATIONS,
PROGRAMMING (COMPUTERS), NONLINEAR DIFFERENTIAL
EQUATIONS, ANALOG-DIGITAL COMPUTERS, COMPUTER
LOGIC, TABLES (U)

IDENTIFIERS: SLASH, B-5000 COMPUTERS, B-5500
COMPUTERS, ALGOL (U)

THE ALGOL LANGUAGE PROGRAM SLASH (SEILER
LABORATORY ALGOL SIMULATED HYBRID) IS A
DEVELOPMENT FROM THE FORTRAN MIDAS PROGRAM.
SLASH PROVIDES BURROUGHS B-5000 AND B-5500
USERS AN ANALOG SIMULATION CAPABILITY, SACSAC
(SEILER ALGOL DIGITALLY SIMULATED ANALOG
COMPUTER), AND IT ALSO GOES A STEP FURTHER TO
PROVIDE A HYBRID SIMULATION, IN WHICH THE ANALOG
SIMULATION IS COUPLED WITH AN ALGOL CONTROL PROGRAM
THAT HAS BEEN TAILORED FOR A SPECIFIC PROBLEM. IN
ESSENCE THE 'CONTROL PROGRAM' ALLOWS MODE CONTROL OF
THE ANALOG PROGRAM AS WELL AS ADJUSTMENT OF
PARAMETERS AND INITIAL CONDITIONS. THIS HYBRID
CHARACTER IS PARTICULARLY SUITED TO THE ITERATIVE
OPTIMAL CONTROL PROBLEMS, BUT IT ALSO HAS GENERAL
APPLICATION TO ANY SYSTEM OF ORDINARY DIFFERENTIAL
EQUATIONS. SLASH ALLOWS A SIGNIFICANT REDUCTION IN
PROGRAMMING TIME AND EFFORT OVER THE NORMAL DIGITAL
AND ANALOG METHODS; THEREFORE, ITS USE IS QUITE
ADVANTAGEOUS FOR PROBLEMS WHICH WILL BE RUN ONLY A
LIMITED NUMBER OF TIMES WITHOUT CHANGES OR
MODIFICATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-470 845

BATTELLE MEMORIAL INST COLUMBUS OHIO
SELF-INSTRUCTIONAL TEXT FOR PLACE PROGRAMMING. THE
AN/GJQ-9 (PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT
EQUIPMENT). (U)

DESCRIPTIVE NOTE: REPT. FOR PERIOD FEB-DEC 64.
SEP 65 284P STOCK, JOHN R. I

CONTRACT: AF33 615 1126

PROJ: AF8119

TASK: 811926

MONITOR: APL IT-65-1

UNCLASSIFIED REPORT

DESCRIPTORS: (•CHECKOUT EQUIPMENT,
PROGRAMMING (COMPUTERS)), (•PROGRAMMING
LANGUAGES, CHECKOUT EQUIPMENT), INSTRUCTION
MANUALS, PUNCHED TAPE, AUTOMATIC, ALGEBRA,
VOLTAGE, MEASUREMENT (U)
IDENTIFIERS: AN/GJQ-9, PLACE (U)

THIS SELF-INSTRUCTIONAL TEXT IS INTENDED TO
INSTRUCT ENGINEERS IN THE USE OF PLACE (PROGRAMMING
LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT)
TO PROGRAM THE AN/GJQ-9. IT COVERS ALL ASPECTS
OF THE LANGUAGE, FROM THE BASIC ELEMENTS (WORDS,
NUMBERS, OPERATION AND PUNCTUATION CHARACTERS)
THROUGH THE LIBRARY FORMS FOR THE AN/GJQ-9 TO THE
DEVELOPMENT OF NEW STATEMENTS USING THE PROGRAMMER-
DEFINED FORM AND PHASED-MACRO FACILITIES OF PLACE.
RESULTS OF A TEST IN WHICH FIVE ENGINEERS ACTUALLY
USED THE TEXT TO LEARN PLACE INDICATE THAT ABOUT 20
HOURS ARE REQUIRED TO COMPLETE IT. TO FULLY
UNDERSTAND ALL OF THE MATERIAL PRESENTED, SOME
KNOWLEDGE OF THE AN/GJQ-9 IS REQUIRED.

(AUTHOR)

(U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-478 496 9/2
RAND CORP SANTA MONICA CALIF
INTRODUCTION TO THE SIMSCRIPT II PROGRAMMING
LANGUAGE. (U)
FEB 66 7P KIVIAT, PHILIP J. ;
REPT. NO. R-2214

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES, DESIGN),
CODING, COMPILERS, COMPUTERS, SIMULATION (U)
IDENTIFIERS: SIMSCRIPT 2, FORTRAN, ALGOL (U)

THIS REPORT TRACES THE AUTHOR'S THOUGHTS ON THE
DESIGN, IMPLEMENTATION AND STRUCTURE OF SIMSCRIPT
II. THE REPORT IS NOT EXHAUSTIVE! IT DOES REFLECT
THE MAJOR CONSIDERATIONS OF THE LANGUAGE DESIGN.
(AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD 600 027

ARMY ELECTRONICS LABS FORT MONMOUTH N J
A COMPLETE FLOATING DECIMAL INTERPRETIVE SYSTEM FOR
THE LGP-30 ROYAL MCBECK DIGITAL COMPUTER.

(U)

DEC 63 95P LEFKER, ROBERT J

TASK: 1A0 105018010

MONITOR: AELMDL

TR2419

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, DIGITAL COMPUTERS),
(*PROGRAMMING (COMPUTERS), DIGITAL COMPUTERS),
(*DIGITAL COMPUTERS, COMPUTER LOGIC), PROGRAMMING
LANGUAGES

(U)

AN INTERPRETIVE SYSTEM WHICH TRANSFORMS THE LGP-30 INTO A THREE ADDRESS, FLOATING DECIMAL, GENERAL-PURPOSE COMPUTER PRIMARILY SUITED FOR SCIENTIFIC AND ENGINEERING CALCULATIONS IS DESCRIBED IN THIS REPORT. THE SYSTEM IS COMPLETE IN THAT ALL MATHEMATICAL, LOGICAL, INPUT-OUTPUT, AND TRACING OPERATIONS NORMALLY CALLED FOR IN SUCH CALCULATIONS CAN BE PERFORMED WITHIN THE SYSTEM WITHOUT REFERENCE TO THE BASIC MACHINE LANGUAGE OF THE LGP-30. EASE OF USE, HIGHEST POSSIBLE SPEED OF ARITHMETIC, INCLUSION OF THE MOST FREQUENTLY USED LOGICAL OPERATIONS, AND THE GREATEST RANGE IN THE TRANSCENDENTAL FUNCTIONS HAVE BEEN THE MAIN GENERAL CONSIDERATIONS IN DEVELOPING THE SYSTEM. THE USER OF THE SYSTEM NEED ONLY CONCERN HIMSELF WITH SECTIONS ENTITLED GENERAL CONSIDERATIONS THROUGH PROGRAMMING, WHILE THOSE INTERESTED IN THE STRUCTURE OF THE SYSTEM WILL FIND IT DESCRIBED IN THE SECTIONS ENTITLED INTERNAL STRUCTURE OF THE SYSTEM. (AUTHOR)

(U)

UNCLASSIFIED

000289

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-601 171

MITRE CORP BEDFORD MASS

FORSIM IV. FORTRAN IV SIMULATION LANGUAGE USER'S
GUIDE.

(U)

PAY 64 98P FAMOLARI, E. I

REPT. NO. SR-99

CONTRACT: AF19 628 2290

PROJ: 416.2

MONITOR: ESD TOR64 108

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*SIMULATION, PROGRAMMING LANGUAGES),
(*PROGRAMMING LANGUAGES, SIMULATION), (*CONTROL
SEQUENCES, COMPILERS), (*PROGRAMMING (COMPUTERS)),
SYNTHESIS, MODELS (SIMULATIONS), INTERCEPTION, CONTROL
SYSTEMS, COMMAND AND CONTROL SYSTEMS, HANDBOOKS (U)

FORSIM IV WAS DEVELOPED AS AN AID TO SIMULATING
CERTAIN ASPECTS OF THE BACK-UP INTERCEPTOR
CONTROL (BUIC) SYSTEM, AND IS THE FIRST GENERAL
SIMULATION PSEUDO-LANGUAGE DEVELOPED FOR THE IBM
7090 COMPUTER. IT REPRESENTS AN INNOVATION IN
SIMULATION LANGUAGE TECHNIQUE SINCE IT IS CONSTRUCTED
NOT AS A LANGUAGE, BUT AS A SUBROUTINE PACKAGE. IT
CAN BE ADAPTED TO ANY COMPUTER CAPABLE OF COMPILING
PROGRAMS WRITTEN IN FORTRAN IV LANGUAGE.
CONSTRUCTED IN FORTRAN IV, FORSIM IV IS
CONCEPTUALLY RELATED TO CONTROL AND SIMULATION
LANGUAGE (CSL); HOWEVER, IT PROVIDES COMMANDS AND
SERVICES NOT AVAILABLE IN CSL, WHILE ITS SUBROUTINE
STRUCTURE PROVIDES FOR THE EASY EXPANSION OF THE
COMMAND SET, AS WELL AS VIRTUAL MACHINE INDEPENDENCE.
A MODEL FORSIM IV PROGRAM IS INCLUDED IN THE
DOCUMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-601 796

SYSTEMS RESEARCH GROUP INC MINEOLA N Y
MILITRAN PROGRAMMING MANUAL.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.

JUN 64 205P

CONTRACT: NONR2926 DD ,PROJS.

PROJ: TASK

MONITOR: ESD TDR64 220

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LANGUAGE, DATA PROCESSING SYSTEMS),
(*PROGRAMMING LANGUAGES), PROGRAMMING (COMPUTERS),
SIMULATION, INPUT-OUTPUT DEVICES, COMPILERS, DIGITAL
COMPUTERS, INFORMATION RETRIEVAL, COMPUTER LOGIC,
CONTROL SEQUENCES, READING MACHINES, CHARACTER
RECOGNITION, INSTRUCTION MANUALS, OPERATIONS RESEARCH,
CODING

(U)

IDENTIFIERS: MILITRAN

(U)

THE MILITRAN PROGRAMMING MANUAL IS ONE OF
THREE TECHNICAL REPORTS WHICH CONSTITUTE A COMPLETE
DESCRIPTION AND INSTRUCTIONS FOR USING THE MILITRAN
LANGUAGE IN COMPUTER PROGRAMMING OF SIMULATION
PROBLEMS. TOPICS DISCUSSED IN THIS REPORT
INCLUDE: (1) A DEFINITION AND SAMPLING OF THE
MILITRAN LANGUAGE; (2) GENERAL LANGUAGE
CHARACTERISTICS; (3) BASIC MILITRAN
ENVIRONMENTS; (4) PROGRAMMING IN MILITRAN;
ARITHMETIC AND LOGICAL PROCESSING; (5) CONTROL
STATEMENTS; (6) LISTS AND LIST PROCESSING
STATEMENTS; (7) EVENTS; (8) PROCEDURES; AND
(9) INPUT-OUTPUT STATEMENTS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-602 229

MITRE CORP BEDFORD MASS

AN APPROACH TO COMPARING COSTS OF ELECTRONIC
PROCESSING OF PERT DATA: PERT I VERSUS PERT III. (U)

JUN 64 16P AUTIO.A. E. 1

REPT. NO. W-6611

CONTRACT: AF19 628 2290

PROJ: 850

MONITOR: ESD TDR64 112

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, DIGITAL
COMPUTERS), (*PROGRAMMING (COMPUTERS), COSTS),
(*COMPILERS, EFFECTIVENESS), SYSTEMS ENGINEERING,
PROGRAMMING LANGUAGES, ECONOMICS (U)
IDENTIFIERS: PERT (U)

THIS DOCUMENT DEVELOPS RELATIONSHIPS FOR ESTIMATING
COSTS OF PROCESSING SINGLE RUNS OF PERT DATA ON THE
7090 COMPUTER ON THE BASIS OF THE NUMBER OF
ACTIVITIES PER NETWORK. A COMPARISON IS ALSO MADE
OF THE PERT I VS. PERT III PROCESSING COSTS IN
WHICH THE LATTER APPEARS DECIDEDLY MORE ATTRACTIVE,
PARTICULARLY IN THE LARGER NETWORKS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-602 506

WESTINGHOUSE DEFENSE AND SPACE CENTER BALTIMORE MD
STUDY AND INVESTIGATION TO DEVELOP COMPILER
TECHNIQUES REQUIRED FOR PROGRAMMING THE PARALLEL
NETWORK COMPUTER. (U)

DESCRIPTIVE NOTE: FINAL REPT.

JUN 64 108P

CONTRACT: AF30 602 3146

PROJ: 5581

TASK: 558109

MONITOR: RADC

TDR64 175

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING (COMPUTERS), COMPILERS),
(*COMPILERS, PROGRAMMING (COMPUTERS)), CONTROL
SEQUENCES, COMPUTER LOGIC, INPUT-OUTPUT DEVICES,
INSTRUCTION MANUALS (U)

IDENTIFIERS: PARALLEL COMPUTERS, SOLOMON COMPUTERS,
PARALLEL NETWORK COMPUTERS (U)

THIS REPORT DESCRIBES THE WORK COMPLETED ON THE
FIRST PHASE OF A PLANNED PROGRAM TO DEVELOP
TECHNIQUES FOR A COMPILER TO ASSIST IN THE
PROGRAMMING OF PARALLEL NETWORK COMPUTERS (SOLOMON
COMPUTER IN PARTICULAR). THE ONE-YEAR
DEVELOPMENT CONTRACT WAS TERMINATED BY DIRECTIVE OF
ODD, ODRANDE AFTER FOUR MONTHS OF PROGRESS;
THEREFORE, ONLY THE SPECIFICATION OF AN ASSEMBLY
LANGUAGE FOR THE PARALLEL NETWORK COMPUTER WAS
COMPLETED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-602 199

IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
DESIGN MECHANIZATION OF A PROBLEM-ORIENTED SYMBOL
PROCESSOR. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAY 64 40P SCHAUER, R. F. INOTZ, W. ;
MULLERY, A. ;

CONTRACT: AF19 628 2991

PROJ: 4641

TASK: 464105

MONITOR: AFCLRL , 64 454

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTER
LOGIC), (*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES),
DATA PROCESSING SYSTEMS, DESIGN, PROGRAMMING
(COMPUTERS), CONTROL SYSTEMS, SIMULATION, COMPILERS,
COMPUTER STORAGE DEVICES (U)

IDENTIFIERS: ADAM, ALGOL, SYMBOL PROCESSORS (U)

THE REPORT DESCRIBES THE DESIGN MECHANIZATION OF
THE LOGICAL DESIGN FOR THE ADAM PROBLEM ORIENTED
SYMBOL PROCESSOR. THIS INCLUDES COMPUTER
EVALUATION OF LOGIC CONNECTIONS, MACHINE GENERATION
OF LOGIC DIAGRAMS AND OTHER APPROPRIATE LISTS AND
TABLES. A PROGRAM FOR THE AUTOMATIC GENERATION OF
THE LAYOUT FOR STORING THE CONTROL PROGRAMS IN THE
HEAD-ONLY MEMORY AND A DIAGNOSTIC PROCEDURE FOR
CHECKING THE CONTROL PROGRAMS ARE ALSO DESCRIBED.
FINALLY THE INITIAL PARTS OF AN ALGOL COMPILER
WRITTEN AS PART OF AN EVALUATION OF ADAM SYSTEM ARE
PRESENTED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-603 200

IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
DESIGN: MECHANIZATION OF A PROBLEM-ORIENTED SYMBOL
PROCESSOR.

(U)

DESCRIPTIVE NOTE: APPENDICES I, III, IV, AND V TO
FINAL REPT.,

MAY 64 55P SCHAUER, R. F. INOTZ, W. ;

MULLERY, A. ;

CONTRACT: AF19 628 2991

PROJ: 4641

TASK: 464105

MONITOR: AFCL , 64-454, APP. 1, 2-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTER
LOGIC), (*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES),
(*PROGRAMMING (COMPUTERS), DESIGN, COMPILERS, COMPUTER
STORAGE DEVICES

(U)

IDENTIFIERS: ADAM, ALGOL, SYMBOL PROCESSORS

(U)

THE APPENDICES ARE FOR USE WITH AD-603 199.

INCLUDED ARE: BASIC LOGIC BLOCK DIAGRAMS,

DIAGNOSTIC PROGRAMS, READ-ONLY MEMORY LAYOUT PROGRAM,

AND ALGOL ARITHMETIC COMPILER.

(U)

UNCLASSIFIED

DUC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-612 482

INFORMATION INTERNATIONAL INC CAMBRIDGE MASS
THE PROGRAMMING LANGUAGE LISP: ITS OPERATION AND
APPLICATIONS.

(U)

MAR 64 433P ABRAHAMS, PAUL W. ;
BERKELEY, EDHUND C. ; BLACK, FISCHER ; BOBROW, DANIEL
G. ; EVANS, THOMAS G. ;

CONTRACT: SD-162

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, OPERATION),
PROGRAMMING (COMPUTERS), COMPUTER LOGIC, DATA
PROCESSING SYSTEMS, ARTIFICIAL INTELLIGENCE,
TRANSFORMATIONS (MATHEMATICS), COMPUTERS
IDENTIFIERS: LISP

(U)

(U)

AN INTRODUCTION TO LISP IS GIVEN ON AN ELEMENTARY
LEVEL. TOPICS COVERED INCLUDE THE PROGRAMMING
SYSTEM, 240 EXERCISES WITH SOLUTIONS, DEBUGGING OF
LISP PROGRAMS, AND STYLES OF PROGRAMMING. MORE
ADVANCED DISCUSSIONS ARE CONTAINED IN THE FOLLOWING
ARTICLES: TECHNIQUES USING LISP FOR
AUTOMATICALLY DISCOVERING INTERESTING RELATIONS IN
DATA; AUTOMATION, USING LISP, OF INDUCTIVE
INFERENCE ON SEQUENCES; APPLICATION OF LISP TO
MACHINE CHECKING OF MATHEMATICAL PROOFS; METEOR: A
LISP INTERPRETER FOR STRING TRANSFORMATIONS; NOTES
ON IMPLEMENTING LISP FOR THE M-460 COMPUTER;
LISP AS THE LANGUAGE FOR AN INCREMENTAL COMPUTER;
THE LISP SYSTEM FOR THE G-2 COMPUTER; AN
AUXILIARY LANGUAGE FOR MORE NATURAL EXPRESSION -- THE
A-LANGUAGE. SOME APPLICATIONS OF THE UTILIZATION
OF THE LISP PROGRAMMING LANGUAGE ARE GIVEN IN THE
APPENDICES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-604 350

PARKE MATHEMATICAL LABS INC CARLISLE MASS

MADCAP: MAMMOTH DECIMAL ARITHMETIC PROGRAM FOR THE
PDP-1 COMPUTER. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT. NO. 1.

JUN 64 54P MYRVAAGNES, E. I

CONTRACT: AF19 628 2826

PROJ: 5626

TASK: 562601

MONITOR: AFCRL , 64 510

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, MATHEMATICS),
(*COMPILERS, PROGRAMMING LANGUAGES), (*DIGITAL
COMPUTERS, PROGRAMMING LANGUAGES), COMPUTERS, CONTROL
SEQUENCES, PROGRAMMING (COMPUTERS), INSTRUCTION
MANUALS (U)

IDENTIFIERS: MADCAP (MAMMOTH DECIMAL ARITHMETIC
PROGRAM) PDP-1 COMPUTER (U)

A MULTIPLE-PRECISION FLOATING-POINT ARITHMETIC
PROGRAM, MADCAP, FOR THE PDP-1 COMPUTER IS
DESCRIBED. THE NUMBER OF SIGNIFICANT DIGITS
MAINTAINED DURING CALCULATIONS CAN BE VARIED EASILY
TO SUIT THE USER'S REQUIREMENTS OF SPEED VS.
ACCURACY. PROGRAMMING IN MADCAP'S OWN SOURCE
LANGUAGE IS EXTREMELY SIMPLE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-604 531

RAND CORP SANTA MONICA CALIF

99-GATE,

(U)

AUG 62 49P

VAN WORMER, THEODORE A. I

REPT. NO. P-2602

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTERS),

(*PROGRAMMING (COMPUTERS), PROGRAMMING LANGUAGES) (U)

IDENTIFIERS: 99-GATE (GENERAL ALGEBRAIC TRANSLATOR
EXTENDED) (U)

THE PAPER IS A PRIMER FOR INSTRUCTION IN THE 99-
GATE LANGUAGE. 99-GATE IS A SYSTEM IN WHICH YOU
MAY INSTRUCT A COMPUTER TO PERFORM ALGEBRAIC
COMPUTATIONS. SPECIFICALLY, 99-GATE IS:

GENERAL ALGEBRAIC TRANSLATOR EXTENDED FOR THE
IBM 709/7090. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-604 720

MASSACHUSETTS INST OF TECH CAMBRIDGE
NATURAL LANGUAGE INPUT FOR A COMPUTER PROBLEM SOLVING
SYSTEM. (U)

DESCRIPTIVE NOTE: DOCTORAL THESIS,
SEP 64 155P BOBROW, DANIEL G. I
REPT. NO. MAC-TR-1
CONTRACT: NONR4102 01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJ. MAC.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DATA PROCESSING
SYSTEMS), (*PROGRAMMING (COMPUTERS), LANGUAGE),
COMMUNICATION THEORY, ALGEBRA, SIMULTANEOUS EQUATIONS,
MATHEMATICAL PROGRAMMING, ARTIFICIAL INTELLIGENCE,
TRANSFORMATIONS (MATHEMATICS), NUMERICAL ANALYSIS (U)
IDENTIFIERS: MAC PROJECT, STUDENT SYSTEM, ENGLISH
LANGUAGE, LISP, SEMANTICS (U)

THE STUDENT PROBLEM SOLVING SYSTEM. PROGRAMMED IN
LISP. ACCEPTS AS INPUT A COMFORTABLE BUT RESTRICTED
SUBSET OF ENGLISH WHICH CAN EXPRESS A WIDE VARIETY
OF ALGEBRA STORY PROBLEMS. STUDENT FINDS THE
SOLUTION TO A LARGE CLASS OF THESE PROBLEMS. THE
THESIS INCLUDES A SUMMARY OF OTHER ENGLISH LANGUAGE
QUESTION-ANSWERING SYSTEMS. THE LINGUISTIC
ANALYSIS IN STUDENT IS A FIRST APPROXIMATION TO THE
ANALYTIC PORTION OF A SEMANTIC THEORY OF DISCOURSE
OUTLINED IN THE THESIS. STUDENT FINDS THE SET OF
KERNEL SENTENCES WHICH ARE THE BASE OF THE INPUT
DISCOURSE, AND TRANSFORMS THIS SEQUENCE OF KERNEL
SENTENCES INTO A SET OF SIMULTANEOUS EQUATIONS WHICH
FORM THE SEMANTIC BASE OF THE STUDENT SYSTEM.
STUDENT THEN TRIES TO SOLVE THIS SET OF EQUATIONS
FOR THE VALUES OF REQUESTED UNKNOWNNS. IF IT IS
SUCCESSFUL IT GIVES THE ANSWERS IN ENGLISH. IF
NOT, STUDENT ASKS THE USER FOR MORE INFORMATION,
AND INDICATES THE NATURE OF THE DESIRED INFORMATION.
THE STUDENT SYSTEM IS A FIRST STEP TOWARD NATURAL
LANGUAGE COMMUNICATION WITH COMPUTERS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-604 818

RAND CORP SANTA MONICA CALIF

A QUICK LOOK AT SIMSCRIPT,

(U)

OCT 22 24P

KARR, HERBERT W. I

DEPT. NO. P-2658

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT PHI DELTA KAPPA SYMPOSIUM IN EDUCATIONAL RESEARCH (NO. 4) INDIANA UNIV. BLOOMINGTON, 9 NOV 62. EXTRACTED FROM CHAP. I OF MARKOWITZ, HAUSNER, AND KARR 'SIMSCRIPT: A SIMULATED PROGRAMMING LANGUAGE'.

DESCRIPTORS: (PROGRAMMING (COMPUTERS), SIMULATION), (PROGRAMMING LANGUAGES, SIMULATION), (COMPUTERS, SIMULATION), COMPILERS, DATA PROCESSING SYSTEMS, DIGITAL COMPUTERS

(U)

IDENTIFIERS: SIMSCRIPT

(U)

IN SIMSCRIPT, THE STATUS OF A SIMULATED SYSTEM IS DESCRIBED IN TERMS OF ENTITIES, ATTRIBUTES OF ENTITIES, AND SETS OF ENTITIES. STATUS IS CHANGED AT POINTS IN SIMULATED TIME CALLED EVENTS. A SEPARATE EVENT ROUTINE MUST BE WRITTEN FOR EACH DIFFERENT KIND OF EVENT TO BE INCLUDED IN THE SIMULATION. FOR CONVENIENCE IN WRITING THESE ROUTINES, THE SIMSCRIPT SOURCE LANGUAGE CONTAINS A VARIETY OF COMMANDS ESPECIALLY ADAPTED TO SIMULATION PROBLEMS. SOME OF THESE COMMANDS ARE ILLUSTRATED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-606 627

RAND CORP SANTA MONICA CALIF
A COMMAND STRUCTURE FOR COMPLEX INFORMATION
PROCESSING,

(U)

62P SHAW, J. C. ; NEWELL, A. I

SIMON, H. A. ; ELLIS, T. O. I

REPT. NO. P-1277

MONITOR: PB , 164 088

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE WESTERN JOINT
COMPUTER CONFERENCE, LOS ANGELES, 6 MAY 58.

LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.
REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), (*CONTROL SEQUENCES, PROGRAMMING
LANGUAGES), THEOREMS, PROGRAMMING (COMPUTERS), DATA
PROCESSING SYSTEMS, DATA STORAGE SYSTEMS, INPUT-
OUTPUT DEVICES

(U)

IDENTIFIERS: IPL COMPUTERS

(U)

RECENT RESEARCH INTO DIGITAL COMPUTER PROGRAMS FOR
DISCOVERING PROOFS TO THEOREMS IN SYMBOLIC LOGIC AND
PLAYING CHESS HAS SHOWN THE DESIRABILITY OF LANGUAGES
BETTER ADAPTED TO THE REQUIREMENTS OF SUCH NON-
NUMERIC PROGRAMMING TASKS THAN ARE PRESENT DAY
MACHINE LANGUAGES. A COMMAND STRUCTURE WHICH ALLOWS
MORE INDIRECTNESS IN PROGRAMMING AND REQUIRES LESS
KNOWLEDGE OF THE LOCATION AND FORM OF THE DATA IS
DESCRIBED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-607 363

SYSTEMS RESEARCH LABS INC DAYTON OHIO

A NEW APPROACH TO COMPUTER COMMAND STRUCTURES. (U)

DESCRIPTIVE NOTE: FINAL REPT., ADD. FOR 15 SEP 63-15

MAF 64,

MAY 64

65P

KIN, C. K. IIRIN, L. E. I

MAIFR, E. 8. I

CONTRACT: AF30 602 2741

PROJ: 5531

TASK: 553102

MONITOR: RADG ,

TR64 125

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ALGEBRA),
(*COMPUTER LOGIC, CONTROL SEQUENCES), (*GROUP
(MATHEMATICS), PROGRAMMING LANGUAGES), (*ALGEBRA,
PROGRAMMING LANGUAGES), PROGRAMMING (COMPUTERS),
MATHEMATICS

(U)

IDENTIFIERS: THETA LANGUAGE

(U)

THE PURPOSE OF THE RESEARCH UNDER THIS CONTRACT
EXTENSION WAS TO INVESTIGATE PROGRAMMING MANIPULATION
AND ASSOCIATED PROBLEMS USING THE ALGEBRAIC COMPUTER
LANGUAGE (THETA-LANGUAGE) DEVELOPED PREVIOUSLY
UNDER THIS RESEARCH CONTRACT. THE REPORT CONTAINS
A REFINEMENT OF THE THETA-LANGUAGE, THE DESCRIPTION
OF THE METALANGUAGE AS A SOURCE LANGUAGE, THE
DEFINITION OF THE THETA-LANGUAGE IN TERMS OF
METALANGUAGE, THE ESTABLISHMENT OF THE THETALANGUAGE
AS A PRECEDENCE LANGUAGE, AND THE SYNTACTIC STRUCTURE
OF THE THETA-LANGUAGE. IT ALSO CONTAINS THE
PROGRAMMING MANIPULATION OF THE THETA-LANGUAGE, THE
THEORETICAL INVESTIGATION OF THE PRIME PHASE
STRUCTURE OF THE THETA-LANGUAGE, AND APPLICATION OF
LINEAR GRAPH THEORY TO PROGRAMMING CONTROL.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-607 985

ROME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y

FLOPAK: FLOATING POINT PROGRAMING PACKAGE, (U)

OCT 64 98P

CORDELL, STEVE I

MONITOR: RADC .

TDRA4 395

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY. REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (PROGRAMMING (COMPUTERS), COMMUNICATION SYSTEMS), PROGRAMMING LANGUAGES, COMMUNICATION SYSTEMS), REAL TIME, AUTOMATIC, COMPILERS (U)

FLOPAK IS A PACKARD-BELL 250 COMPUTER SEMI-AUTOMATIC, FLOATING-POINT PROGRAMING SYSTEM WHICH MAY BE OPERATED SIMULTANEOUSLY IN EITHER OF TWO MODES. THE FIRST IS A NON-TIME OPTIMIZED MODE WHICH MAY BE USED BY INEXPERIENCED CODERS; THE SECOND MODE IS A HIGH-SPEED, FULLY TIME-OPTIMIZED FLOATING-POINT ARITHMETIC SYSTEM WHICH AN EXPERIENCED PROGRAMER MAY USE IN REAL-TIME COMPUTATIONS AND IN GENERAL, SINGLE PRECISION CALCULATIONS. IT IS THE ONLY PB-250 FLOATING-POINT SYSTEM AVAILABLE WHICH MAY BE USED IN REAL-TIME CONTROL. THE SYSTEM WAS ORIGINALLY DESIGNED TO SOLVE A REAL-TIME COMMUNICATION PROBLEM.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-606 292

STANFORD UNIV CALIF SCHOOL OF HUMANITIES AND
SCIENCES

NUMERICAL METHODS FOR SOLVING LINEAR LEAST SQUARES
PROBLEM. AN ALGOL PROCEDURE FOR FINDING LINEAR LEAST
SQUARES SOLUTIONS. (U)

AUG 69 26P

GOLUB, G. IBUSINGER, PETER I

REPT. NO. CS-12

CONTRACT: NONR229 97

PROJ: NR044 11

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•LEAST SQUARES METHOD, NUMERICAL
METHODS AND PROCEDURES), (•NUMERICAL METHODS AND
PROCEDURES, LEAST SQUARES METHOD), (•PROGRAMMING
LANGUAGE, LEAST SQUARES METHOD), MATRIX ALGEBRA,
TRANSFORMATIONS (MATHEMATICS), PROGRAMMING
(COMPUTERS) (U)

IDENTIFIERS: HOUSEHOLDER TRANSFORMATION (U)

NUMERICAL METHODS FOR SOLVING LINEAR LEAST SQUARES
PROBLEM. AN ALGOL PROCEDURE FOR FINDING LINEAR LEAST
SQUARES SOLUTIONS.

UNCLASSIFIED

CDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-608 367

RAND CORP SANTA MONICA CALIF

THE LOGIC OF INTERROGATING A DIGITAL COMPUTER, (U)

NOV 64 24P

HARON, H. E. I

RLPT. NO. P-3006

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE 1964 LINGUISTIC
INSTITUTE OF THE LINGUISTIC SOCIETY OF AMERICA,
UNIV. OF INDIANA, BLOOMINGTON.

DESCRIPTORS: (DIGITAL COMPUTERS, COMPUTER LOGIC);
(COMPUTER LOGIC, DIGITAL COMPUTERS), LANGUAGE,
ARTIFICIAL INTELLIGENCE, CYBERNETICS, COMMUNICATION
THEORY, INFORMATION RETRIEVAL, PROBABILITY,
MATHEMATICAL LOGIC (U)

THE TOPICS DISCUSSED IN THIS PAPER ARE (1) THE
INFORMATION SCIENCES, (2) INTERROGATING A DIGITAL
COMPUTER, (3) DATA RETRIEVAL SYSTEMS, AND (4)
CYBERNETICS, MEANING, AND COMPREHENSION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-608 499

MASSACHUSETTS INST OF TECH CAMBRIDGE

SIR: A COMPUTER PROGRAM FOR SEMANTIC INFORMATION
RETRIEVAL.

(U)

DESCRIPTIVE NOTE: DOCTORAL THESIS.

JUN 69 169P

RAPHAEL, BERTRAM I

REPT. NO. MAC-TR-2

CONTRACT: NONR4102 01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJECT MAC.

DESCRIPTORS: (PROGRAMMING (COMPUTERS), INFORMATION
RETRIEVAL), (INFORMATION RETRIEVAL, LANGUAGE),
(LANGUAGE, INFORMATION RETRIEVAL), COMPUTERS,
ARTIFICIAL INTELLIGENCE, DOCUMENTATION, DIGITAL
COMPUTERS

(U)

IDENTIFIERS: MAC PROJECT, SIR (SEMANTIC INFORMATION
RETRIEVAL), THESES, SEMANTICS, LISP

(U)

SIR IS A COMPUTER SYSTEM, PROGRAMMED IN THE LISP LANGUAGE, WHICH ACCEPTS INFORMATION AND ANSWERS QUESTIONS EXPRESSED IN A RESTRICTED FORM OF ENGLISH. THIS SYSTEM DEMONSTRATES WHAT CAN REASONABLY BE CALLED AN ABILITY TO 'UNDERSTAND' SEMANTIC INFORMATION. SIR'S SEMANTIC AND DEDUCTIVE ABILITY IS BASED ON THE CONSTRUCTION OF AN INTERNAL MODEL, WHICH USES WORD ASSOCIATIONS AND PROPERTY LISTS, FOR THE RELATIONAL INFORMATION NORMALLY CONVEYED IN CONVERSATIONAL STATEMENTS. A FORMAT-MATCHING PROCEDURE EXTRACTS SEMANTIC CONTENT FROM ENGLISH SENTENCES. IF AN INPUT SENTENCE IS DECLARATIVE, THE SYSTEM ADDS APPROPRIATE INFORMATION TO THE MODEL. IF AN INPUT SENTENCE IS A QUESTION, THE SYSTEM SEARCHES THE MODEL UNTIL IT EITHER FINDS THE ANSWER OR DETERMINES WHY IT CANNOT FIND THE ANSWER. IN ALL CASES SIR REPORTS ITS CONCLUSIONS. THE SYSTEM HAS SOME CAPACITY TO RECOGNIZE EXCEPTIONS TO GENERAL RULES, RESOLVE CERTAIN SEMANTIC AMBIGUITIES, AND MODIFY ITS MODEL STRUCTURE IN ORDER TO SAVE COMPUTER MEMORY SPACE. JUDGING FROM ITS CONVERSATIONAL ABILITY, SIR IS MORE 'INTELLIGENT' THAN ANY OTHER EXISTING QUESTIONANSWERING SYSTEM. THE AUTHOR DESCRIBES HOW THIS ABILITY WAS DEVELOPED AND HOW THE BASIC FEATURES OF SIR COMPARE WITH THOSE OF OTHER SYSTEMS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-608 227

IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
COMPUTER PROGRAMMING TECHNIQUES FOR INTELLIGENCE
ANALYST APPLICATION. (U)

DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 2. 16 FEB-19 MAY
64.

OCT 64 182P

CONTRACT: AF30 602 3303

MONITOR: RADC , TDR64 210

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-605 267.

DESCRIPTORS: (PROGRAMMING (COMPUTERS), INFORMATION
RETRIEVAL), (INFORMATION RETRIEVAL, DATA PROCESSING
SYSTEMS), STATISTICAL ANALYSIS, SUBJECT INDEXING,
DISPLAY SYSTEMS, PROGRAMMING LANGUAGES, LANGUAGE,
COSTS, MILITARY INTELLIGENCE, ANALYSIS (U)
IDENTIFIERS: AN/GYA, STORM, ASSOCIATIVE RETRIEVAL,
WORDS, LIST PROCESSING, INDEXING TERMS, THESAURI,
SEMANTICS, FORTRAN PROGRAM (U)

MODIFICATIONS WERE MADE ON THE MONITOR AND
APPLICATION PROGRAMS OF THE AN/GYA COMPLEX. THE
MULTI-PROCESSING MONITOR CAN HANDLE DYNAMIC TAPE
ALLOCATION, AND IT PERMITS UPDATING OF THE DRUM-DISK
LIBRARY. ADDITIONAL DISTRIBUTION FUNCTIONS HAVE
BEEN PROGRAMMED FOR INCLUSION IN STORM AND ON THE
AN/GYA DISK. A LIST-PROCESSING LANGUAGE HAS BEEN
DEFINED, AND IS BEING PROGRAMMED, WHICH WILL
FACILITATE INCLUSION OF PROTOTYPE STUDIES IN THE LAY
USER'S SYSTEM. PROGRAMS HAVE BEEN DEVELOPED TO
PERMIT EXPERIMENTAL RUNS FOR THE DETERMINATION OF
STATISTICAL WORD ASSOCIATION. THE CLEAR TEXT SYSTEM
HAS BEEN AUGMENTED BY NOVEL ENCODING FEATURES WHICH
PERMIT FASTER SEARCH. PRE-PROCESSING OF AN
EXTENDED DATA BASE IS UNDER WAY. A STUDY WAS
PREPARED PROPOSING THE USE OF AN ADAPTIVE THESAURUS
AS AN EXPERIMENTAL TOOL TO QUANTIFY PROPERTIES OF
INDEXING SYSTEMS. (AUTHOR) APPENDICES:
NONCENTRAL STATISTICAL DISTRIBUTION PROGRAMS FOR A
COMPUTER LANGUAGE, BY ROLF E. BARGMANN AND
SAKTI P. GHOSH; AND TOWARDS DESIGN AND
EVALUATION OF INDEXING SYSTEMS FOR INFORMATION
RETRIEVAL, PART 1 AND 2, COSTS AND PARAMETERS, BY
P. REISNER. (U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-608 894

MASSACHUSETTS COMPUTER ASSOCIATES INC WAKEFIELD
AMBIT: A PROGRAMMING LANGUAGE FOR ALGEBRAIC SYMBOL
MANIPULATION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT. NO. 4,
OCT 64 59P CHRISTENSEN, CARLOS J
CONTRACT: AF19 628 419 , AF30 602 3342
PROJ: 4641
TASK: 464102
MONITOR: AFCRL , 64 909

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ALGEBRA),
(*ALGEBRA, PROGRAMMING LANGUAGES), PROGRAMMING
(COMPUTERS), NUMERICAL METHODS AND PROCEDURES,
IDENTITIES, CONTROL SEQUENCES, COMPUTER LOGIC, DATA
PROCESSING SYSTEMS, DIGITAL COMPUTERS (U)
IDENTIFIERS: AMBIT (U)

THIS PAPER DEFINES A PROGRAMMING LANGUAGE SYSTEM
CALLED AMBIT (ALGEBRAIC MANIPULATION BY
IDENTITY TRANSLATION). THE AMBIT LANGUAGE IS
INTENDED FOR THE PRECISE DESCRIPTION OF THE
OPERATIONS OF MATHEMATICS IN GENERAL, AND PROGRAMS IN
THE LANGUAGES ARE SUITABLE FOR EFFICIENT COMPILATION
AND EXECUTION BY AN AUTOMATIC COMPUTER. THE
LANGUAGE IS DISTINGUISHED BY ITS ADHERENCE TO AN
IMPORTANT PORTION OF THE CONVENTIONAL NOTATION OF
ALGEBRA, THE 'IDENTITY'. AMBIT USES THE 'IDENTITY'
TO EXPRESS IN A SINGLE LINGUISTIC STRUCTURE AN
ARBITRARILY COMPLEX SEQUENCE OF ELEMENTARY SYMBOL-
MANIPULATION OPERATIONS, JUST AS FORTRAN AND ALGOL
USE THE 'FORMULA' TO EXPRESS IN A SINGLE LINGUISTIC
STRUCTURE AN ARBITRARILY COMPLEX SEQUENCE OF
ARITHMETIC OPERATIONS. THUS AMBIT ATTEMPTS TO
SERVE ALGEBRA AS FORTRAN AND ALGOL SERVE
ARITHMETIC. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-609 487

CALIFORNIA UNIV BERKELEY ELECTRONICS RESEARCH LAB
TECHNIQUES FOR AUTOMATING THE CONSTRUCTION OF
TRANSLATORS FOR PROGRAMMING LANGUAGES, (U)

JAN 64 20P WATTENBURG, W. H. :

REPT. NO. ERL-64-45

CONTRACT: AF AFOSR129 62 , AF AFOSR129 64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PROGRAMMING LANGUAGES, COMPILERS),
(COMPILERS, PROGRAMMING LANGUAGES), PROGRAMMING
(COMPUTERS), AUTOMATION, MATHEMATICAL ANALYSIS,
AUTOMATION (U)

IDENTIFIERS: NELIAC PROGRAM, FORTRAN PROGRAM, IBM-
7090, UNCOL LANGUAGE, REMINGTON RAND M460, CDC-3600
COMPUTER (U)

FORMAL PROCEDURES ARE SUMMARIZED FOR CONSTRUCTING
TRANSLATORS WHEREBY A COMPUTER IS USED TO GENERATE
SUBSTANTIAL PORTIONS OF THE TRANSLATORS, THE LATTER
BEING TERMED SYMBOLIC MACHINE LANGUAGE ASSEMBLERS,
MACRO EXPANDERS, OR COMPILERS. THE TRANSLATORS ALL
PERFORM THE TASK OF TRANSLATING PROGRAMS WRITTEN IN
ONE LANGUAGE INTO EQUIVALENT PROGRAMS WRITTEN IN
ANOTHER. BASIC BOOTSTRAP PROCEDURE: THE FIRST
TRANSLATORS WERE WRITTEN IN AN AVAILABLE MACHINE
LANGUAGE AND WERE MOSTLY SYMBOLIC MACHINE LANGUAGE
TRANSLATORS (ASSEMBLERS). APPLICATION OF THE
'BOOTSTRAP' PROCEDURE WAS THE WRITING IN SYMBOLIC
LANGUAGE, INCLUDING THE TRANSLATOR ITSELF, OF
PROGRAMS, ONCE A SYMBOLIC MACHINE LANGUAGE TRANSLATOR
BECAME AVAILABLE FOR A PARTICULAR MACHINE. THE
BOOTSTRAP PROCEDURE HAS THE PROPERTY THAT EACH
TRANSLATOR CAN TRANSLATE ITS OWN DESCRIPTION INTO
ITSELF SINCE IT IS DESCRIBED BY A LANGUAGE WHICH IS A
SUBSET OF THE LANGUAGE IT TRANSLATES. THE
NELIAC, COMPILER FOR THE REMINGTON RAND M460
IS A 'SELF-COMPILING COMPILER'. MULTIPLE BOOTSTRAP
PROCEDURES: THESE PROCEDURES INVOLVE TRANSLATORS
PRODUCING OBJECT PROGRAMS FOR MACHINES OTHER THAN THE
MACHINE THAT PERFORMED THE TRANSLATION. AS AN
EXAMPLE OF THE USE OF AN INTERMEDIATE LANGUAGE AND
MULTIPLE BOOTSTRAP PROCEDURE, THERE IS CITED THE
TRANSLATOR CONSTRUCTED FOR THE FORTRAN LANGUAGE AND
THE IBM-7090 AND CDC-3600 COMPUTERS BY
MENDICINO, STORCH, AND SUTHERLAND AT THE
LAWRENCE RADIATION LAB. OF THE UNIVERSITY OF
CALIFORNIA. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-610 817
INFORMATICS INC SHERMAN OAKS CALIF
EXECUTIVE CONTROL PROGRAM (ECP-1A): (U)
DESCRIPTIVE NOTE: FINAL REPT. FOR FEB-SEP 64.
JAN 65 272P
CONTRACT: AF30 602 3045
PROJ: 5581
TASK: 558102
MONITOR: RADC , TDR64 460

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (AIR FORCE RESEARCH, COMPUTERS),
(COMPUTERS, MULTIPLE OPERATION), (AIR FORCE SYSTEMS
COMMAND, COMPUTERS), DATA PROCESSING SYSTEMS,
PROGRAMMING (COMPUTERS), ELECTRONIC SWITCHES,
NETWORKS, MAGNETIC TAPE, INPUT-OUTPUT DEVICES,
COMPUTER STORAGE DEVICES (U)
IDENTIFIERS: MAN-MACHINE SYSTEMS, COMPUTER CONSOLES,
ALPHABET, CDC-360-A COMPUTER, CHARACTER SETS, BUNKER-
R/40 CH-400 COMPUTER (U)

THE FIRST PHASE OF THE EXECUTIVE CONTROL
PROGRAM (ECP-1A) DEVELOPED FOR THE
EXPERIMENTAL COMPUTING COMPLEX AT RADC IS
DESCRIBED. THE EXPERIMENTAL COMPUTER COMPLEX
CONSISTS OF SUCH THINGS AS MULTIPLE USER CONSOLES,
MULTI-PROGRAMMING IN ONE COMPUTER, MULTI-COMPUTERS,
AND A VARIETY OF PERIPHERAL EQUIPMENT FROM DIFFERENT
MANUFACTURERS, ALL INTERCONNECTED THROUGH AN
ELECTRONIC SWITCHING NETWORK. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-610 824

RAND CORP SANTA MONICA CALIF

WHAT IS DETAB-X.

(U)

DESCRIPTIVE NOTE: MEMORANDUM,

OCT 62

27P

POLLACK, SOLOMON L. :

REPT. NO. P-2608-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE GUIDE MEETING OF
THE CODASYL DEVELOPMENT COMMITTEE IN PHILADELPHIA,
PA., 1-2 NOV 62.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, FEASIBILITY
STUDIES), DECISION THEORY, CONTROL SEQUENCES,
PROGRAMMING (COMPUTERS), DATA PROCESSING SYSTEMS,
COMMERCE

(U)

IDENTIFIERS: DETAB-X (DECISION-TABLES, EXPERIMENTAL),
COBOL

(U)

THE AIR FORCE, LIKE MANY OTHER LARGE USERS OF
COMPUTERS, CONTINUALLY SEEKS TO REDUCE ITS COMPUTER
PROGRAMMING STAFFS, COSTS, AND TIME-LAGS. TOWARD
THIS END, IT HAS BEEN EXPLORING THE USE OF COMPUTER-
INDEPENDENT LANGUAGES FOR DESCRIBING ITS PROBLEMS.
THIS MEMORANDUM DESCRIBES ONE OF THE LATEST OF
THESE LANGUAGES, DETAB-X (DECISIONTABLES,
EXPERIMENTAL). IN AN EFFORT TO ILLUSTRATE SOME
OF THE FEATURES OF DETAB-X IT IS COMPARED WITH
COBOL-61 (COMMON BUSINESS-ORIENTED
LANGUAGE), USING EXAMPLES OF DATA AND PROCEDURES
WRITTEN IN BOTH LANGUAGES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-611 827

GENERAL ELECTRIC CO SANTA BARBARA CALIF TECHNICAL MILITARY
PLANNING OPERATION

LAP-LIST ASSEMBLY PROGRAMMING SYSTEM.

(U)

DESCRIPTIVE NOTE: RESEARCH MEMO.,

JUN 64 77P GWYNN, JOHN W. I

REPT. NO. RH64TMP-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PROGRAMMING LANGUAGES, PROGRAMMING
(COMPUTERS)), (PROGRAMMING (COMPUTERS), PROGRAMMING
LANGUAGES), COMPUTERS, DATA PROCESSING SYSTEMS,
COMPUTER STORAGE DEVICES

(U)

IDENTIFIERS: LIST PROCESSING, LAP (LIST ASSEMBLY
PROGRAM)

(U)

LAP CONSISTS OF FOUR FUNCTIONAL PACKAGES WHICH ARE
COMPUTER PROGRAMS THAT RUN ON THE COMPUTER TO ALLOW
EXECUTION OF PROGRAMS WRITTEN IN THE LAP LANGUAGE.
FIRST, THE LAP ASSEMBLY PROGRAM WILL PROCESS A
SOURCE PROGRAM TO PRODUCE AN OBJECT PROGRAM FOR A
NONEXISTENT LIST-PROCESSING MACHINE. SECOND, THE
LAP PROCESSOR SIMULATES THE MISSING HARDWARE AND
ALLOWS THE PROGRAM TO BE EXECUTED ON THE EXISTING
COMPUTER. THIRD, THE MACHINE LANGUAGE ASSEMBLY
PROGRAM ASSEMBLES THOSE SUBPROGRAMS WRITTEN IN THE
LANGUAGE OF THE EXISTING HARDWARE. FOURTH, THE
LAP CONTROLLING TAPE SYSTEM IS THE OVERALL 'MASTER
CONTROL' TO THE OTHER FUNCTIONS. THE SYSTEM IS
CAPABLE OF EXECUTIVE CONTROL OVER A PROGRAM
CONSISTING OF LIST MANIPULATIVE MACRO-INSTRUCTIONS
AND PERHAPS SOME SUBPROGRAMS CONSISTING OF MACHINE
LANGUAGE INSTRUCTIONS. THESE FOUR FUNCTIONAL,
RELATED PIECES OF THE LAP SYSTEM 'MARRY' THE
LANGUAGE TO THE COMPUTER PRODUCING A 'LAP MACHINE'.
THIS MACHINE IS READY TO AID THE RESEARCHER IN HIS
WORK.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-611 841

RAND CORP SANTA MONICA CALIF

LIPL: LINEAR INFORMATION PROCESSING LANGUAGE, (U)

FEB 69 68P DUPCHAK, ROBERT I

REPT. NO. RM-4920-PR

CONTRACT: AF49 628 700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY
LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF
REQUESTED BY USERS OF DDC. A COPY IS AVAILABLE FOR PUBLIC
SALE.

DESCRIPTORS: (PROGRAMMING LANGUAGES, CONTROL
SEQUENCES), (DATA PROCESSING SYSTEMS, PROGRAMMING
LANGUAGES), COMPILERS, LINEAR SYSTEMS (U)
IDENTIFIERS: LIPL (LINEAR INFORMATION PROCESSING
LANGUAGE) (U)

THIS MEMORANDUM IS A SUPPLEMENT TO THE
'INFORMATION PROCESSING LANGUAGE-V MANUAL,'
DETAILING A NEW ALTERNATE FORMAT IN WHICH
(INFORMATION PROCESSING LANGUAGE) ROUTINES
AND DATA CAN BE REPRESENTED. SPECIFICALLY, LIPL
(LINEAR IPL) IS A HORIZONTAL, LINEAR, PARENTHESIS
FORMAT. THIS MEMORANDUM ALSO DESCRIBES A NEW IPL
BASIC PROCESS, J164, FOR IN-PROCESS LOADING OF
LIPL ROUTINES AND DATA. J164 HAS BEEN CODED AS
AN IPL ROUTINE, AND, THEREFORE, CAN BE USED ON ANY
IPL COMPUTER. A DESCRIPTION AND LISTING OF THIS
ROUTINE IS INCLUDED; CARD OR TAPE COPIES OF THE
ROUTINE CAN BE OBTAINED BY WRITING THE RAND
CORPORATION. THE USE OF LIPL IS DETAILED IN THE
INTRODUCTION, WHICH IS FOLLOWED BY A REFERENCE
SECTION ARRANGED FOR QUICK LOOKUP OF INFORMATION OF
THE LIPL USER. SECTION III DESCRIBES THE
IPL-CODED, IN-PROCESS LIPL LOADER, J164; THE
APPENDIX GIVES A COMPLETE LISTING OF THIS ROUTINE.
SECTION III AND THE APPENDIX ARE INCLUDED
SOLELY FOR THE USE OF THE SYSTEMS PROGRAMMER
RESPONSIBLE FOR INCORPORATING LIPL INTO A
PARTICULAR OBJECT MACHINE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-613 002

RAND CORP SANTA MONICA CALIF

USE OF HYBRID COMPUTING IN DESIGN AUTOMATION, (U)

MAR 69 22P ROWE, A. J. BROCK, P. I

REPT. NO. P-2086

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DRAFTING, AUTOMATION), (*DESIGN, AUTOMATION), (*ANALOG-DIGITAL COMPUTERS, DRAFTING), DATA PROCESSING SYSTEMS, DISPLAY SYSTEMS, PRODUCTION, MECHANICAL DRAWINGS, ENGINEERING, PROGRAMMING (COMPUTERS), PROGRAMMING LANGUAGES, INFORMATION RETRIEVAL (U)

A NUMBER OF COMPUTER DEVICES, NOW AVAILABLE FOR ASSISTANCE IN ENGINEERING AND DRAFTING ARE DISCUSSED. CONSIDERATION IS GIVEN TO PROGRAMMING LANGUAGE REQUIREMENTS. OTHER ASPECTS OF THE PROBLEM INCLUDE QUESTIONS OF INFORMATION STORAGE AND RETRIEVAL, NUMERICAL MACHINE CONTROLS, AND MORE EFFICIENT COMPUTATIONAL METHODS FOR DESIGN, INCLUDING SIMULATION AND HEURISTIC TECHNIQUES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-614 782

RAND CORP SANTA MONICA CALIF

AN EXPERIMENTAL SYNTAX-DIRECTED DATA STRUCTURE
LANGUAGE.

(U)

APR 69

SIP

LINDSAY, ROBERT K. I

PRATT, TERRENCE W. ISHAVOR, KENNETH H. I

REPT. NO. P-3112

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH TEXAS
UNIV., AUSTIN. GRANT NSF G0492.

DESCRIPTORS: (COMPIERS, PROGRAMMING LANGUAGES),
(PROGRAMMING LANGUAGES, COMPIERS), DATA STORAGE
SYSTEMS, ARTIFICIAL INTELLIGENCE, WORD ASSOCIATION,
PROGRAMMING (COMPUTERS)

(U)

IDENTIFIERS: AMOS (ASSOCIATIVE MEMORY ORGANIZING
SYSTEM)

(U)

PROGRAMMERS DEVELOPING SYSTEMS OF THE COMPLEXITY
REQUIRED IN ARTIFICIAL INTELLIGENCE RESEARCH ARE
FREQUENTLY HINDERED BY THE RIGID PROGRAMMING
LANGUAGES AVAILABLE AND THE TIME-CONSUMING TASK OF
IMPLEMENTING NEW LANGUAGES. AMOS (FOR ASSOCIATIVE
MEMORY ORGANIZING SYSTEM) PROVIDES A FLEXIBLE MEANS
TO STRUCTURE DATA AND EXPERIMENT WITH THE SYNTACTIC
FORMS OF PROGRAM STATEMENTS WHILE LESSENING THE
IMPLEMENTATION BOTTLENECK. AMOS IS A SYNTAX-
DIRECTED COMPILER USED TO DEFINE LANGUAGES FOR
CONSTRUCTING A VARIETY OF DATA ORGANIZATIONS OF WHICH
FORTRAN-LIKE ARRAYS AND IPL-LIKE LIST STRUCTURES
ARE SPECIAL CASES. THIS RESEARCH EXPLORES THE USE
OF SYNTACTIC DESCRIPTIONS WHICH ARE NOT BACKUS
NORMAL FORM GRAMMARS AND PROVIDES MEANS FOR
DEFINING TWO-DIMENSIONAL LANGUAGES AS WELL AS THE
USUAL LINEAR TYPE. IN ORDER TO FACILITATE
IMPLEMENTATION, THE SYSTEM MAY BE CONVENIENTLY
IMBEDDED IN ANY MONITOR SYSTEM OF COMMON DESIGN.
AMOS OPERATIONS ARE MANIPULATIONS WITHIN HIGH-SPEED
STORAGE ONLY. (AUTHOR)

(U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-614 794

DUKE UNIV DURHAM N.C

THE DUKE ALGOL COMPILER AND SYNTACTIC ROUTINE METHOD
FOR SYNTAX RECOGNITION. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,

APR 69 24P GALLIE, THOMAS M. JR.:

CONTRACT: AF AFOSR62 164

MONITOR: AFOSR , 69-0719

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, PROGRAMMING LANGUAGES),
(*PROGRAMMING LANGUAGES, COMPILERS), (*MACHINE
TRANSLATION, PROGRAMMING LANGUAGES), DATA PROCESSING
SYSTEMS, DIGITAL COMPUTERS, PROGRAMMING (COMPUTERS),
LANGUAGES, PATTERN RECOGNITION, DECISION THEORY (U)
IDENTIFIERS: SYNTAX, ALGOL, STRINGS (LINGUISTICS) (U)

THE DEVELOPMENT OF THE MOST IMPORTANT IDEAS ABOUT
RECOGNITION AND ANALYSIS OF SYNTAX WITHIN MECHANICAL
LANGUAGES IS DISCUSSED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-618 303

RAND CORP SANTA MONICA CALIF

SIMULATION PROGRAMMING AND ANALYSIS OF RESULTS, (U)

MAY 68 9P GINSBERG, ALLEN S. I

REPT. NO. P-2141

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: FOR PRESENTATION AT THE SIMULATION
PANEL OF THE DEPARTMENT OF DEFENSE LOGISTICS
CONFERENCE TO BE HELD AT WARRENTON, VA., 26-28 MAY
68.

DESCRIPTORS: (PROGRAMMING (COMPUTERS), SIMULATION),
(PROGRAMMING LANGUAGES, SIMULATION), STOCHASTIC
PROCESSES, SERIES (U)
IDENTIFIERS: SIMSCRIPT, TIME SERIES ANALYSIS,
SPECTRAL ANALYSIS (U)

TECHNIQUES ARE DISCUSSED THAT HAVE ARISEN FOR
SIMPLIFYING AND SPEEDING DEVELOPMENT OF DIGITAL
SIMULATION AND FOR INCREASING THE MEANINGFULNESS OF
THEIR RESULTS. SIMULATION PROGRAMMING: OF
PROGRAMMING LANGUAGES FOR A SIMULATION MODEL, THE
GENERAL PURPOSE SYSTEMS SIMULATOR II IBM CP
DIV., B20-4246, 1967) SHOULD BE USED IF IT IS
ADAPTABLE AND IF MEMORY LIMITATIONS AND RUNNING TIME
ARE NOT EXCESSIVE. OTHERWISE SIMSCRIPT (B. H.
MARKOWITZ AND H. KARR, 'SIMSCRIPT: A SIMULATION
PROGRAMMING LANGUAGE,' ENGLEWOOD CLIFFS, N.
J., PRENTICE HALL, APRIL 1967) OR OTHER
LANGUAGES SHOULD BE USED. THE METHOD OF
GINSBERG, MARKOWITZ, AND OLDFATHER (AD-612
976) FOR PROGRAMMING BY QUESTIONNAIRE ELIMINATES
THE NEED FOR LEARNING A FORMAL SIMULATION LANGUAGE
AND REDUCES THE TIME FOR OBTAINING A PROGRAM TO A
MATTER OF DAYS OR HOURS. ANALYSIS OF RESULTS: THE
COMPLICATION OF THE VARIABILITY OF SIMULATION RESULTS
HAS BEEN APPROACHED BY CONWAY (AD-287 927)
REGARDING THE TIME SERIES ASPECT AND BY FISHMAN AND
KIVIAT (AD-612 281) REGARDING SPECTRAL
ANALYSIS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-619 660

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ALGORITHMIC LANGUAGES PROJECT.

(U)

DESCRIPTIVE NOTE: FINAL REPT. FOR 1 JUN 62-15 AUG 64;
FEB 65 12P GINSBURG, SEYMOUR I

REPT. NO. TM-728/012/00

CONTRACT: AF19 628 485

PROJ: 9672

TASK: 96208

MONITOR: AFRL , 45-169

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-284 282.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, THEORY),
MATHEMATICAL MODELS, MATHEMATICAL LOGIC, DATA
PROCESSING SYSTEMS, LANGUAGE, SEQUENCES, SET THEORY,
MAPPING (TRANSFORMATIONS)

(U)

IDENTIFIERS: COBOL, JOVIAL, ALGOL, WORDS, GRAMMAR,
COMPUTATIONAL LINGUISTICS

(U)

REPORTS THAT THE PURPOSE OF THIS ALGORITHMIC
LANGUAGES PROJECT WAS TO ACCOMPLISH THE FOLLOWING:
1) CONDUCT RESEARCH DESIGNED TO DEVELOP A THEORY
FOR ALGORITHMIC (PROGRAMMING) LANGUAGES, 2)
DEVELOP SUITABLE MATHEMATICAL MODELS OF CURRENTLY
USED MATHEMATICAL LANGUAGES SUCH AS ALGOL, COBOL,
AND JOVIAL, AND, 3) USE THE MATHEMATICAL MODELS
TO ANSWER QUESTIONS OF INTEREST ABOUT THESE
LANGUAGES. REVIEWS AND SUMMARIZES FINDINGS
PRESENTED IN PREVIOUS VOLUMES IN THIS SERIES.
(AUTHOR)

(U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-619 744

WISCONSIN UNIV MADISON MATHEMATICS RESEARCH CENTER
AN ARSENAL OF ALGOL PROCEDURES FOR THE EVALUATION OF
CONTINUED FRACTIONS AND FOR EFFECTING THE EPSILON
ALGORITHM, (U)

JAN 68 99P WYNN, P. I

REPT. NO. MRC-7SR-537

CONTRACT: DA11 0220RD2059

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (+CONTINUED FRACTIONS, PROGRAMMING
(COMPUTERS)), (+PROGRAMMING LANGUAGES, CONTINUED
FRACTIONS), TRANSFORMATIONS (MATHEMATICS), SERIES,
SEQUENCES, SPECIAL FUNCTIONS (MATHEMATICAL) (U)

IDENTIFIERS: ALGOL, EPSILON ALGORITHM (U)

AN INTEGRATED SYSTEM OF ALGOL PROCEDURES FOR THE
EVALUATION OF CONTINUED FRACTIONS WITH REAL
COEFFICIENTS AND FOR THE TRANSFORMATION OF SLOWLY
CONVERGENT SEQUENCES BY MEANS OF THE EPSILON-
ALGORITHM IS GIVEN. USE OF THE PROCEDURES IS
ILLUSTRATED BY THE COMPUTATION OF A NUMBER OF
CLASSICAL FUNCTIONS OF MATHEMATICAL PHYSICS.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-619 763

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
TEXTIR: A NATURAL LANGUAGE INFORMATION RETRIEVAL
SYSTEM.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
MAY 68 27P FARELL, JULES I
REPT. NO. TH-2392

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-619 720.

DESCRIPTORS: (*INFORMATION RETRIEVAL,
PROGRAMMING(COMPUTERS)),
(*PROGRAMMING(COMPUTERS), INFORMATION
RETRIEVAL), (*CRIMINOLOGY, INFORMATIONAL
RETRIEVAL), LANGUAGE, POLICE, SUBJECT INDEXING,
TELETYPE SYSTEMS, PROGRAMMING LANGUAGES

(U)

IDENTIFIERS: TEXTIR COMPUTER PROGRAM, INDX
COMPUTER PROGRAM, FIND COMPUTER PROGRAM, TIME
SHARING(COMPUTERS), SYNTEX, ENGLISH
LANGUAGE

(U)

A SET OF PROGRAMS CALLED TEXTIR HAS BEEN
DEVELOPED AS PART OF A JOINT LOS ANGELES POLICE
DEPARTMENT AND SYSTEM DEVELOPMENT CORPORATION
EXPERIMENT AND STUDY CONCERNING THE COMPUTER
RETRIEVAL OF CRIME DATA IN NATURAL ENGLISH
LANGUAGE. TEXTIR AUTOMATICALLY INDEXES TEXTUAL
DATA AND RESPONDS TO NATURAL LANGUAGE QUERIES OF THE
INDEXED TEXT. THIS REPORT DESCRIBES THE TEXTIR
PROGRAMS AND PROVIDES PRELIMINARY RESULTS ON THE USE
OF TEXTIR ON CRIME DATA. ITS POTENTIAL USE FOR
HANDLING INFORMATION OTHER THAN CRIME DATA IS ALSO
SUGGESTED. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-616 730

NAVAL MISSILE CENTER POINT MUGU CALIF
FORTRAN PROGRAM FOR PLOTTING TWO-DIMENSIONAL
GRAPHS,

JUN 61 18P WEST, R. G. REYNOLDS, J. R. 1 (U)

REPT. NO. NMC-TM-65-21

TASK: R34U1002A

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LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF
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DESCRIPTORS: (*GRAPHICS,
PROGRAMMING(COMPUTERS)),
(*PROGRAMMING(COMPUTERS), GRAPHICS),
(*PROGRAMMING LANGUAGES, GRAPHICS) (U)
IDENTIFIERS: FORTRAN IV LANGUAGE, FORTRAN, LOOK
PROGRAMMING LANGUAGE, MAP PROGRAMMING LANGUAGE (U)

A COMPUTER PROGRAM IN FORTRAN IV LANGUAGE ENABLES
USERS TO PLOT TWO-DIMENSIONAL GRAPHS WITH THE
STANDARD OUTPUT PRINTER DURING THE EXECUTION PHASE OF
ANY FORTRAN IV OR MAP (MACHINE LANGUAGE) MAIN
PROGRAM. THIS FORTRAN PROGRAM CONSISTS OF THREE
SUBROUTINES: GRAPH, PACK, AND PLACE; AND ONE THAT
IS OPTIONAL, SELECT. SUBROUTINE GRAPH
INCORPORATES PACK AND PLACE, WHICH ARE MAP
SUBROUTINES. THESE TWO MAP SUBROUTINES CONSERVE
COMPUTER STORAGE AND TIME REQUIRED TO PRINT THE
OUTPUT OF THE PROGRAM. SUBROUTINE SELECT IS USED
TO DEFINE THE BEGINNING AND END POINTS OF THE GRAPH
SCALE. IF SELECT IS NOT USED, THE MINIMUM AND
MAXIMUM SCALE VALUES FOR THE AXES MUST BE DEFINED IN
THE MAIN PROGRAM. THE FOUR SUBROUTINES ARE FULLY
DESCRIBED, AND THE COMPUTER LISTINGS FOR THEM ARE
GIVEN. USE OF THE ABOVE SUBROUTINES IN A MAIN
PROGRAM IS DEMONSTRATED WITH A SAMPLE MAIN PROGRAM,
CALLED LOOK, AS A GUIDE FOR INCORPORATING THE
SUBROUTINES IN ANY MAIN PROGRAM. SAMPLE GRAPHS FOR
LOOK ARE SHOWN AS PRINTED BY THE COMPUTER.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-617 244

HITRE CORP BEDFORD MASS

PAT, A LANGUAGE FOR PROGRAMMING AND MANCOMPUTER
COMMUNICATION,

JUN 68 28P

SILVER, R. WELLS, C. I

(U)

REPT. NO. W-07191

CONTRACT: AF19 628 2290

PROJ: 508

MONITOR: ESD ,

TDR-64-626

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (+PROGRAMMING(COMPUTERS),
PROGRAMMING LANGUAGES), (+PROGRAMMING LANGUAGES,
PROGRAMMING(COMPUTERS)), COMPILERS, CONTROL
SEQUENCES, COMMUNICATION THEORY

(U,

IDENTIFIERS: PAT, MAN - MACHINE COMMUNICATIONS

(U)

PAT IS A COMPUTER LANGUAGE OF THE MACRO-ASSEMBLY
TYPE. THE PROGRAM, WHICH TRANSLATES PAT INTO
COMPUTER CODE, IS DESIGNED TO BE USED NOT ONLY AS A
COMPILER OF PROGRAMS, BUT AS A SYMBOLIC INTERFACE
BETWEEN A USER AND A COMPUTER. IN THIS LATTER
CAPACITY, IT CAN SERVE TO INTERPRET COMMANDS AND
ACCEPT COMMAND DEFINITIONS FOR SUCH PROGRAMS AS A
TEXT EDITOR, ON-LINE DEBUGGER, OR SIMULATED DESK
CALCULATOR. THE LANGUAGE AND THE TRANSLATOR HAVE
BEEN DESIGNED TO ALLOW THE STRUCTURE OF THE
TRANSLATOR ITSELF TO BE MODIFIED BY CERTAIN
DEFINITIONS ENCOUNTERED DURING THE TRANSLATION
PROCESS. THE RULES FOR DEFINING SYMBOLS AND
REFERRING TO THEM HAVE BEEN ORGANIZED TO FACILITATE
COMBINING INDEPENDENTLY WRITTEN PROGRAMS INTO A
SINGLE UNIT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-618 880

ARMY ELECTRONICS COMMAND FORT MONMOUTH N J
THE COBOL COMPILER: OPTIMIZING MILITARY COMPUTER
OPERATION. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

MAR 69 22P TAUPEKA, NORMAN J. I

REPT. NO. ECOM-2586

PROJ: 1X6 406020494

TASK: 1X6 406020494 02, 1X6 406020494 02 02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, ARMY EQUIPMENT),
(*COMPUTERS, ARMED FORCES SUPPLIES), PROGRAMMING
LANGUAGES, PROGRAMMING (COMPUTERS), DIGITAL
COMPUTERS, OPTIMIZATION, MAGNETIC TAPE, ERRORS,
MOBILE, COMPUTER STORAGE DEVICES, LOGISTICS (U)
IDENTIFIERS: MOBIDIC, COBOL, VERBS (U)

THIS REPORT PRESENTS IN BASIC ENGINEERING
TERMINOLOGY A DESCRIPTION OF THE RECENT DEVELOPMENT
OF A COBOL COMPILER FOR USE WITH THE U. S. ARMY'S
MILITARIZED MOBIDIC (MOBILE DIGITAL COMPUTER).
THE PROCESS OF COMPILER TRANSLATION AND COMPILATION
OF AN ENGLISH LANGUAGE TYPE SOURCE PROGRAM INTO
AN OBJECT PROGRAM IS DISCUSSED. THE MAJOR
BENEFITS DERIVED FROM THE USE OF THE COBOL COMPILER
ARE EXPLAINED, I.E., (1) DOCUMENTATION, (2)
MINIMIZATION OF TRAINING, AND (3) 411 REDUCTION
IN PROGRAMMING TIME. DEVELOPMENT PROBLEMS AND THEIR
SOLUTIONS ARE DISCUSSED. THE REASON, LOCATION, AND
TREATMENT OF COMPILATION ERRORS ARE PROVIDED.
DURING ACCEPTANCE TEST, THE COMPILER WAS FIRST
EVALUATED BY UTILIZING DIAGNOSTIC TYPE PROGRAMS, THEN
TYPICAL APPLICATION DATA PROCESSING PROGRAMS WERE
COMPUED AND EVALUATED. A RECAPITULATION IS
PROVIDED WHICH EMPHASIZES THE MAIN BENEFITS ACHIEVED
BY THE U. S. ARMY THUR FAR IN OPTIMIZING THEIR
MILITARY COMPUTER OPERATION. THE CONCLUSION
SUMMARIZES THE REPORT AND PROJECTS FURTHER LOGISTIC
APPLICATIONS OF THE COBOL COMPILER AT OTHER
INSTALLATIONS, AND APPLICATIONS INTO OTHER PHASES OF
THE CCIS-73 PROGRAM SUCH AS PERSONNEL AND
ADMINISTRATION AND INTELLIGENCE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-622 736 9/2 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
TEXTIR: A USERS' MANUAL. (U)
OCT 68 14F FARELL, JULES I
REPT. NO. TM-2392/001/00

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-615 767.

DESCRIPTORS: (•INFORMATION RETRIEVAL,
PROGRAMMING(COMPUTERS)),
(•PROGRAMMING(COMPUTERS), INFORMATION
RETRIEVAL), INSTRUCTION MANUALS, LANGUAGE,
PROGRAMMING LANGUAGES, ENGLISH LANGUAGE (U)
IDENTIFIERS: TEXTIR COMPUTER PROGRAM, AN/PSQ-22,
SYNTHEX (U)

THIS DOCUMENT DESCRIBES THE OPERATION OF TEXTIR,
A NATURAL LANGUAGE TEXT INDEXING AND RETRIEVAL
SYSTEM, ON THE SDC-ARPA TIME-SHARING SYSTEM
USING THE Q-22. IT LISTS THE STEP-BY-STEP
PROCESSES NECESSARY TO INDEX A PRESTORED TEXT AND
THEN QUERY THE RESULTING ORGANIZED DATA BASE USING
NATURAL LANGUAGE QUESTIONS, AND PROVIDES AN APPENDIX
GIVING THE SYNTHEX KEYPUNCH RULES. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000989

AD-623 771 9/2

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SELF-INSTRUCTIONAL JOVIAL MANUAL: CHAPTERS 1, 2, 3
AND 4.

(U)

DESCRIPTIVE NOTE: PROFESSIONAL PAPER;
OCT 65 SOP CUTLER, DONALD E. ;
REPT. NO. SP-2214/ODG/00

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PROGRAMMING LANGUAGES, INSTRUCTION
MANUALS), PUNCHED CARDS
IDENTIFIERS: JOVIAL

(U)

(U)

PRESENTS A MANUAL FOR JOVIAL PROGRAMMING LANGUAGE
TRAINING WHICH DOES NOT REQUIRE ANY PREVIOUS
PROGRAMMING KNOWLEDGE ON THE PART OF THE STUDENT.
THIS ARRANGEMENT PRESENTS THE ADVANTAGES OF
SENSITIVITY TO INDIVIDUAL LEARNING ABILITIES, AND
INDEPENDENCE FROM A FORMAL CLASS. EACH CHAPTER
CONTAINS REVIEW EXERCISES FOLLOWED BY THE ANSWERS TO
THE QUESTIONS PRESENTED IN THE EXERCISES. CHAPTER
I IS AN INTRODUCTION TO JOVIAL, CHAPTER II
DESCRIBES ITEMS, THE ASSIGNMENT STATEMENT AND THE
FOUR BASIC ARITHMETIC OPERATIONS OF JOVIAL.
CHAPTER III PRESENTS JOVIAL CODING FORMATS AND A
REPRESENTATION OF HOLLERITH INFORMATION ON PUNCHED
CARDS. CHAPTER IV DISCUSSES THE 'IF' AND
'GOTO' STATEMENTS, STATEMENT LABELS AND COMPOUND
STATEMENTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-622 804 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP PRIMER: A SELF-TUTOR FOR Q-32 LISP 1.5. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JUN 68 192P WEISSMAN, CLARK I
REPT. NO. TM-2227/010/00
CONTRACT: SD-97

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PROGRAMMING LANGUAGES, INSTRUCTION (U)
MANUALS) (U)
IDENTIFIERS: LISP, AN/F50-32, ON-LINE SYSTEMS (U)

THE DOCUMENT IS A SELF-TUTOR FOR LISP 1.5
PROGRAMMING, PARTICULARLY FOR ON-LINE Q-32 LISP
1.5. MATERIAL IS ORGANIZED INTO CHAPTERS THAT, BY
DISCUSSION AND EXAMPLE, PROGRESSIVELY EXPAND THE
STUDENT'S UNDERSTANDING OF THE LANGUAGE AND ABILITY
TO WRITE PROGRAMS IN THE LANGUAGE. A CAREFULLY
SELECTED AND GRADUATED SET OF EXERCISES FOR USE ON-
LINE IS PROVIDED AS AN INTEGRAL PART OF EACH CHAPTER.
COMPUTER-CHECKED ANSWERS FOR EACH EXERCISE ARE ALSO
PROVIDED AS A SEPARATE APPENDIX. THE DOCUMENT IS
NOT AN EXHAUSTIVE TREATISE ON LISP 1.5, BUT,
RATHER, A PRACTICAL PRIMER THAT PROVIDES THE SERIOUS
STUDENT WITH A SOLID FOUNDATION FOR UNDERSTANDING THE
PROGRAMMING LANGUAGE AND SYSTEM. HE MAY THEN
EASILY SUPPLEMENT HIS KNOWLEDGE FROM OTHER SOURCES.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-624 940 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ALGORITHMIC LANGUAGES PROJECT. (U)
DESCRIPTIVE NOTE: FINAL REPT. 12 OCT 64-20 JUN 65,
SEP 65 11P GINSBURG, SEYMOUR I
REPT. NO. TM-738/017/00
CONTRACT: AF19(628) 2418
PROJ: AF-5632
TASK: 563203
MONITOR: AFCRL , 65-797

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-613 290, AD-614 073,
AD-618 937, AD-624 938.

DESCRIPTORS: (PROGRAMMING LANGUAGES, THEORY),
MATHEMATICAL LOGIC, SET THEORY, ALGEBRA,
LANGUAGE, AUTOMATA, TRANSDUCERS, MATHEMATICAL
MODELS, LINEAR SYSTEMS, COMPUTER STORAGE
DEVICES, CONTEXT FREE GRAMMARS, ALGORITHMS (U)
IDENTIFIERS: PUSHDOWN STORAGE (U)

THE PURPOSE OF THIS INVESTIGATION WAS TO ACCOMPLISH
THE FOLLOWING: (1) CONDUCT RESEARCH DESIGNED TO
DEVELOP A THEORY FOR ALGORITHMIC (PROGRAMMING)
LANGUAGES. (2) DEVELOP SUITABLE MATHEMATICAL
MODELS OF CURRENTLY USED MATHEMATICAL LANGUAGES SUCH
AS ALGOL, COBOL, AND JOVIAL. (3) USE THE
MATHEMATICAL MODELS TO ANSWER QUESTIONS OF INTEREST
ABOUT THESE LANGUAGES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-625 003 9/2 5/1
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
THEORY, PRACTICE, AND TREND IN BUSINESS
PROGRAMMING.

(U)

DESCRIPTIVE NOTE: PROFESSIONAL PAPER,
JUL 65 23P SHAW, CHRISTOPHER J. 1
REPT. NO. SP-2030/001/02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMMERCE),
(*PROGRAMMING(COMPUTERS), COMMERCE), THEORY,
STATE-OF-THE-ART REVIEWS, DATA PROCESSING
LANGUAGES

(U)

IDENTIFIERS: TIME SHARING(COMPUTERS), ON-LINE
SYSTEMS, FILE STRUCTURES, COLINGO, LUCID LANGUAGE

(U)

SURVEYS SOME WORK DONE IN THE LAST FEW YEARS IN THE
UNITED STATES, BOTH PRACTICAL AND THEORETICAL IN
NATURE, LIKELY TO HAVE AN IMPACT ON PROGRAMMING
PRACTICES FOR COMMERCIAL AND ADMINISTRATIVE PROBLEMS.
TOPICS INCLUDE: NONPROCEDURAL LANGUAGES, WHICH
EMPHASIZE PROBLEM STATEMENT RATHER THAN PROBLEM-
SOLVING PROCEDURES; GENERALIZED FILE PROCESSING
SYSTEMS, WHICH ENABLE PROGRAM TO BE DESCRIBED IN
TERMS OF FILES AND REPORTS AND SMALL SETS OF
RELATIVELY POWERFUL FILEKEEPING OPERATIONS;
USERORIENTED; ON-LINE SYSTEMS THAT ALLOW THE
NONPROGRAMMER, SITTING AT A LOCAL OR REMOTE TERMINAL,
TO RETRIEVE AND PROCESS DATA. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-625 751 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SELF-INSTRUCTIONAL JOVIAL MANUAL. CHAPTERS 5 AND
6. (U)

DESCRIPTIVE NOTE: PROFESSIONAL PAPER;
DEC 65 47P CUTLER, DONALD I. I
REPT. NO. SP-2214/000/00A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-623 771.

DESCRIPTORS: (PROGRAMMING LANGUAGES,
INSTRUCTIONAL MANUALS) (U)
IDENTIFIERS: JOVIAL (U)

SELF-INSTRUCTIONAL JOVIAL MANUAL. CHAPTERS 5 AND 6.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-528 339 9/2 12/2
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL
OF ENGINEERING
KINGSTON FORTRAN II LIBRARY SUBPROGRAMS AS SIMULATION
AIDS. (U)
DESCRIPTIVE NOTE: MASTER'S THESIS,
DEC 65 103P KAUFFMAN, RICHARD HENRY I
REPT. NO. GRE/MATH/65-6,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPILERS),
(*COMPILERS, SIMULATION), MATHEMATICAL MODELS,
PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: THESES, FORTRAN (U)

THIS THESIS DEVELOPED SIX KINGSTON FORTRAN II
LIBRARY SUBPROGRAMS FOR REDUCING THE AMOUNT OF TIME
REQUIRED TO PROGRAM MATHEMATICAL SIMULATIONS WITH THE
IBM 1620. DETAILED OPERATING INSTRUCTIONS ARE
GIVEN FOR THE FOLLOWING SUBPROGRAMS: LEHMER
RANDOM NUMBER GENERATOR, PROCESS POINT
SIMULATIONS, STATISTICAL EVALUATIONS,
INTEGRATION (SIMPSON'S RULE), BINOMIAL
COEFFICIENT AND THE EVALUATION OF THE CUMULATIVE
NORMAL DISTRIBUTIONS. THE THESIS ALSO DESCRIBES,
IN DETAIL, THE OPERATING INSTRUCTIONS OF A METHOD
DEVELOPED FOR BATCH EXECUTION OF KINGSTON FORTRAN
II FOR THE IBM 1620. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-629 729 9/2
DEPARTMENT OF DEFENSE WASHINGTON D C
COBOL, EDITION 1965.
65 312P

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
SPECIFICATIONS), HISTORY
IDENTIFIERS: COBOL, PHILOSOPHY

(U)

(U)

CONTENTS: HISTORY OF CODASYL COBOL
DEVELOPMENT; PHILOSOPHY OF COBOL USE AS A
PROGRAMMING LANGUAGE; TOTAL CODASYL COBOL
LANGUAGE SPECIFICATIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-130 245 9/2 18/9
DAVID TAYLOR MODEL BASIN WASHINGTON D C APPLIED
MATHEMATICS LAB
A LARC MASTER CONTROL ROUTINE (MCR4), (U)
JAN 66 56P KENADY, SARAH E. I
PROJ: S-0003-10-01,
MONITOR: DTMB , 2125

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (DIGITAL COMPUTERS,
PROGRAMMING (COMPUTERS)),
(PROGRAMMING (COMPUTERS), COMPILERS),
(COMPILERS, CONTROL SEQUENCES), DATA PROCESSING
SYSTEMS, REACTOR OPERATIONS, FUEL BURN UP,
NUCLEAR ENGINEERING (U)
IDENTIFIERS: UNIVAC-LARC, FLAME (U)

THIS REPORT DESCRIBES AN OPERATING SYSTEM DEVELOPED
FOR CODE CHECKING, DATA PROCESSING, AND BATCH RUNNING
OF UNIVAC-LARC ROUTINES. IT IS A GENERAL
PURPOSE EXTENSION OF THE FLAME MASTER CONTROL
SYSTEM DESCRIBED IN MODEL BASIN REPORT 1843
(AD-611 775). (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-630 282 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
TRANSLATION OF PROGRAMS FROM ALGOL-60 LANGUAGE INTO
LANGUAGES OF ELECTRONIC COMPUTERS. EXPERIMENT OF
USING TRANSLATOR TA-2, CHAPTER III, (U)
MAR 66 22P SOSIS, P. M. 1
REPT. NO. FTD-TT-66-23,
MONITOR: TT , 66-60814

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF HONO.
ALGORITMICESKII YAZYK ALGO-60 I PRIMENENIE EGO V
STROITELNOI MEKHANIKE, KIEV, 1965 P112-23.

DESCRIPTORS: (*COMPILERS, USSR), PUNCHED CARDS,
COMPUTER STORAGE DEVICES, PROGRAMMING LANGUAGES,
PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: ALCOL (U)

TRANSLATION OF PORTION OF RUSSIAN BOOK ON TRANSLATION
FROM PROGRAMS IN ALGOL 60 TO MACHINE LANGUAGE.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-621 416 9/2
ASSISTANT SECRETARY OF DEFENSE (COMPTROLLER) WASHINGTON D
C
COBOL: INITIAL SPECIFICATIONS FOR A COMMON BUSINESS
ORIENTED LANGUAGE. (U)
APR 60 140P

UNCLASSIFIED REPORT

AVAILABILITY: HARD COPY AVAILABLE FROM
SUPERINTENDENT OF DOCUMENTS, GPO, WASHINGTON, D.
C. 20402.

SUPPLEMENTARY NOTE: REPORT TO CONFERENCE ON DATA
SYSTEMS LANGUAGES BY ITS SHORT RANGE TASK FORCE,
JANUARY 7-8, 1960.

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
SPECIFICATIONS), PROGRAMMING(COMPUTERS),
DIGITAL COMPUTERS, COMMERCE (U)
IDENTIFIERS: COBOL (U)

CONTENTS: GENERAL DESCRIPTION OF COBOL;
CHARACTERS AND WORDS; NOTATION USED IN VERN AND ENTRY
FORMATS IN THE REPORT; PROCEDURE DIVISION; DATA
DIVISION; ENVIRONMENT DIVISION; REFERENCE FORMAT;
SPECIAL FEATURES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-621 961 9/2
RAND CORP SANTA MONICA CALIF
DEVELOPMENT OF NEW DIGITAL SIMULATION LANGUAGES, (U)
APR 66 22P KIVIAT, PHILIP J. I
REPT. NO. P-3248,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
SIMULATION), (*PROGRAMMING (COMPUTERS),
SIMULATION) (U)
IDENTIFIERS: SIMSCRIPT (U)

THEORIES OF SIMULATION MODELLING AND PROGRAMMING
ARE DISCUSSED, AND THE DESIGN AIMS AND A FEW OF THE
LANGUAGE STATEMENTS OF SIMSCRIPT II, A SECOND
GENERATION SIMULATION PROGRAMMING LANGUAGE, ARE
DESCRIBED. THE PROBABLE FUTURE FOR SIMULATION
LANGUAGES AND SIMULATION PROGRAMMING IS POSTULATED. (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-633 678 17/2 9/2 9/4
MASSACHUSETTS INST OF TECH CAMBRIDGE
OCAS - ON-LINE CRYPTANALYTIC AID SYSTEM. (U)
DESCRIPTIVE NOTE: MASTER'S THESIS,
PAG 66 53P EDWARDS, DANIEL JAMES I
REPT. NO. MAC-TR-27,
CONTRACT: NONR-4102(01),
PROJ: NR-048-189.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJECT MAC.

DESCRIPTORS: (*CRYPTOGRAPHY, *PROGRAMMING
LANGUAGES), (*PROGRAMMING(COMPUTERS),
CRYPTOGRAPHY), (*COMPUTERS, CRYPTOGRAPHY),
INFORMATION THEORY, SECRET COMMUNICATION SYSTEMS,
DATA PROCESSING SYSTEMS, REAL TIME, TELEVISION
DISPLAY SYSTEMS (U)
IDENTIFIERS: OCAS (U)

DEFICIENCIES OF VARIOUS PROGRAMMING LANGUAGES FOR
DEALING WITH QUANTITIES FREQUENTLY ENCOUNTERED IN
CRYPTANALYSIS OF SIMPLE CIPHER SYSTEMS ARE DISCUSSED.
A PROGRAMMING SYSTEM IS PROPOSED WHICH WILL PERMIT
A CRYPTANALYST TO WRITE AND DEBUG PROGRAMS TO AID IN
THE SOLUTION OF CRYPTOGRAMS OR CRYPTOGRAPHIC SYSTEMS.
THE BASIC ELEMENTS OF THE PROPOSED PROGRAMMING
SYSTEM ARE DISCUSSED IN DETAIL. THEY INCLUDE:
(1) A PROGRAMMING LANGUAGE TO HANDLE BOTH
ALGEBRAIC QUANTITIES AND CHARACTER STRINGS, (2)
A DISPLAY GENERATOR TO PERMIT QUICK SPECIFICATION OF
A DISPLAY FRAME CONTAINING BOTH ALPHANUMERIC STRINGS
AND NUMERICAL DATA FOR AN ON-LINE CRT DISPLAY
DEVICE, AND (3) AN ON-LINE PROGRAM TO CONTROL
OPERATION OF THE SYSTEM AND AID IN DEBUGGING PROGRAMS
WRITTEN IN THE PROPOSED LANGUAGE. (AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-633 727 5/2

COLUMBIA UNIV NEW YORK DEPT OF ELECTRICAL
ENGINEERING

STUDY OF A COMPUTER DIRECTLY IMPLEMENTING AN
ALGEBRAIC LANGUAGE. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT., 1962-1965.

JAN 66 171P BASHKOW, THEODORE R. I

SASSON, AZRA IKRONFELD, ARNOLD L. I

REPT. NO. TR-87

CONTRACT: AF 19(628)-2796.

PROJ: AF-464105.

MONITOR: AFCRL, 66-95

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *DIGITAL
COMPUTERS), ALGEBRA, COMPUTER LOGIC,
PROGRAMMING (COMPUTERS), DESIGN (U)

A SYSTEM DESIGN IS GIVEN FOR A COMPUTER CAPABLE OF
DIRECT EXECUTION OF FORTRAN SOURCE STATEMENTS.
THE ALLOWED TYPES OF STATEMENTS ARE THE FORTRAN
ARITHMETIC, DO, GO TO, COMPUTED GO TO,
ARITHMETIC IF, READ, PRINT, DIMENSION, CONTINUE,
PAUSE AND END STATEMENTS. UP TO TWO SUBSCRIPTS
ARE ALLOWED FOR VARIABLES AND NO FORMAT STATEMENT
IS REQUIRED. THE PROGRAMMERS SOURCE PROGRAM IS
CONVERTED TO A SLIGHTLY MODIFIED FORM WHILE BEING
LOADED AND PLACED IN A PROGRAM AREA IN LOWER
MEMORY. HIS ORIGINAL VARIABLE NAMES AND STATEMENT
NUMBERS ARE RETAINED IN A SYMBOL TABLE IN UPPER
MEMORY, WHICH ALSO SERVES AS THE DATA STORAGE AREA.
DURING EXECUTION OF THE PROGRAM EACH FORTRAN
STATEMENT IS READ AND INTERPRETED AT BASIC CIRCUIT
SPEED SINCE THE MACHINE IS A HARDWARE INTERPRETER FOR
THESE STATEMENTS. THE MACHINE CORRESPONDS
THEREFORE TO A 'ONE-PASS, LOAD-AND-GO' COMPILER
EXCEPT, OF COURSE, THAT THERE IS NO TRANSLATION TO A
DIFFERENT MACHINE LANGUAGE. THE DESIGN INFORMATION
IS PRESENTED IN THE FORM OF HEAVY STATE DIAGRAMS
FOR EACH OF THE STATEMENT LOADING AND EXECUTION
CIRCUITS PLUS SOME UTILITY CIRCUITS. A METHOD IS
ALSO DESCRIBED FOR GOING FROM THE STATE DIAGRAMS TO
THE LOGIC CIRCUITS WHICH GENERATE AND SEQUENCE THE
REQUIRED MICROSTEPS (REGISTER GATE CONTROL SIGNALS,
MEMORY READ AND WRITE COMMANDS, ETC.) (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-627 227 5/7

IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
AUTOMATIC ENGLISH-TO-LOGIC TRANSLATION IN A
SIMPLIFIED MODEL. A STUDY IN THE LOGIC OF GRAMMAR. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1961-1966.

MAR 66 117P ROHNERT, HERBERT G. I

BACKER, PAUL O. I

CONTRACT: AF 49(628)-1198.

PROJ: AF-7769.

TASK: 976906.

MONITOR: AFOSR 66-1727

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*GRAMMARS, MATHEMATICAL LOGIC),
(*ENGLISH LANGUAGE, MACHINE TRANSLATION),
COMPUTATIONAL LINGUISTICS, TRANSFORMATIONAL
GRAMMARS, CHARACTER RECOGNITION,
PROGRAMMING (COMPUTERS), PROGRAMMING LANGUAGES,
SYNTAX

(U)

IDENTIFIERS: SNOBOL 2

(U)

THE REPORT SUMMARIZES RESEARCH CONDUCTED TO
ESTABLISH LOGICAL STRUCTURES IMPLICIT IN PORTIONS OF
NATURAL ENGLISH AND THE CONSTRUCTION OF ARTIFICIAL
LANGUAGES WHOSE RULES PERMIT AN EXPLICIT STATEMENT OF
THOSE STRUCTURES IN TERMS OF SYMBOLIC LOGIC. A
LANGUAGE CALLED ENGLISH I WAS DESIGNED WHOSE
GRAMMAR IS ESSENTIALLY THAT OF ELEMENTARY LOGIC
ITSELF. COMPUTER PROGRAMS ARE DISCUSSED THAT
RECOGNIZE THE GRAMMATICALITY OF ENGLISH I AND
ENGLISH II, THE LATEST OF A SERIES OF SYNTHESIZED
ENGLISH-LIKE LANGUAGES, AND TRANSLATE ENGLISH
II TO ENGLISH I. RESULTS ARE GIVEN OF ANALYSES
OF THE NATURAL LANGUAGE CORRELATES OF THE LOGICAL
CONCEPTS OF DEGREE, GROUPING, QUANTIFICATION, AND
SCOPE. A 'PLACER' CONCEPT IS DESCRIBED THAT SERVES
AS A BASIC GRAMMATICAL FUNCTION CATEGORY FOR WORDS
AND PHRASES THAT FUNCTION IN PARTICULAR WAYS IN
PARTICULAR CONTEXTS THOUGH THEY MAY USUALLY BELONG TO
OTHER CATEGORIES. A PRECEDENCE SYSTEM, INCLUDING
TWO NEW CONNECTIVES, WAS DEvised THAT AVOIDS PILE-UPS
IN THE ASSIGNMENT OF GROUPERS. THE CONCEPT OF
'FRAGMENTS' IS INTRODUCED TO HANDLE NATURAL LANGUAGE
FACTORING. A CALCULUS OF 'DEMAND' COMPUTATION IS
DESCRIBED FOR COMBINING AND ANALYZING FRAGMENTS.
THE COMPUTER PROGRAMS WERE WRITTEN IN THE STRING-
MANIPULATING LANGUAGE SNOBOL 2. (AUTHOR)

(U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-637 956 9/2 5/7
MASSACHUSETTS COMPUTER ASSOCIATES INC WAKEFIELD
THE TRANGEN SYSTEM ON THE M460 COMPUTER. (U)
DESCRIPTIVE NOTE: FINAL REPT., 12 APR 65-11 APR 66.
JUL 66 150P PLASKOW, JONATHAN E. ;
SCHUMAN, STEPHEN A. ;
REPT. NO. CA-6607-1512,
CONTRACT: AF 19(628)-5091,
PROJ: AF-4641,
TASK: 464102,
MONITOR: AFCL 66-516

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, *PROGRAMMING
LANGUAGES), DIGITAL COMPUTERS,
PROGRAMMING (COMPUTERS), LINGUISTICS,
INSTRUCTION MANUALS (U)
IDENTIFIERS: TRANDIR PROGRAMMING, TRANGEN SYSTEM,
M460 COMPUTER (U)

TRANGEN IS A COMPUTER SYSTEM FOR WRITING COMPILERS.
TRANGEN SYSTEMS HAVE BEEN IMPLEMENTED ON THE IBM-
7094, CDC-1604, AND GE-625, AND HAVE BEEN USED TO
WRITE TRANSLATORS FOR PL/I, ALGOL, FORTRAN IV, AND
TRANDIR. TRANDIR IS THE TRANGEN USER LANGUAGE
WHICH HAS PATTERN MATCHING AND ACTION PRIMITIVES
FOUND USEFUL FOR COMPILERS. THIS REPORT SERVES AS
A USER'S MANUAL FOR TRANDIR/TRANGEN ON THE M460
UNIVAC COMPUTER. IN THIS IMPLEMENTATION, SEVERAL
ON-LINE DEBUGGING FEATURES ARE EMPHASIZED AS WELL AS
THE MODIFIABILITY OF TRANDIR THROUGH RE-
ROOTSTRAPPING. (AUTHOR) (U)

UNCLASSIFIED

DIC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-626 748 9/2

ADAMS (CHARLES W) ASSOCIATES INC CAMBRIDGE MASS
APPLIED RESEARCH ON IMPLEMENTATION AND USE OF LIST
PROCESSING LANGUAGES. (U)

DESCRIPTIVE NOTE: FINAL SCIENTIFIC REPT., JAN 65-JAN
66.

MAY 66 78P SALZMAN, ROY N. ;
FLAHERTY, THOMAS A. ; PONTON, MARLENE E. ;
CONTRACT: AF 19(628)-5026,
PROJ: AF-4641,
TASK: 464102,
MONITOR: AFCRL 6A-264

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SCIENTIFIC
RESEARCH), COMPILERS, COMPUTERS, DISPLAY
SYSTEMS, PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: LIST PROCESSING, FLOATING-POINT
OPERATION, LISP (U)

THE REPORT CONTAINS A SUMMARY OF THE FIVE MAJOR
TASKS PERFORMED DURING THE ONE-YEAR DURATION OF THE
CONTRACT. THE WORK PERFORMED CONSISTED OF: (1)
A VARIABLE-PRECISION FLOATING-POINT PACKAGE FOR THE
SOLUTION OF PROBLEMS REQUIRING VERY HIGH PRECISION,
(2) EXTENSION OF AND IMPROVEMENTS TO THE SOFTWARE
SYSTEM DEVELOPED UNDER AN EARLIER CONTRACT, (3)
ASSISTANCE IN THE IMPLEMENTATION AND VALIDATION OF A
LISP COMPILER, (4) DEVELOPMENT OF A PROGRAM FOR
POWERFUL MANIPULATION OF SYMBOLIC TEXT (TECO), AND
(5) SPECIFICATION OF A SET OF GENERALIZED DISPLAY
ROUTINES FOR VISUAL COMMUNICATION WITH THE COMPUTER.
ALL WORK DONE RELATED TO THE M-460 RESEARCH
COMPUTER AT AFCRL. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-639 675 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ALGORITHMIC LANGUAGES PROJECT. (U)
DESCRIPTIVE NOTE: FINAL REPT. 1 JUL 65-20 JUN 66,
JUL 66 12P GINSBURG, SEYMOUR I
REPT. NO. TM-738/026/00,
CONTRACT: AF 19(628)-5166,
PROJ: AF-5622,
TASK: 562205,
MONITOR: AFCKL 66-562

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-628 202, AD-628 203,
AD-628 204, AD-628 205, AD-624 927, AD-629 309,
AD-630 424, AD-631 337, AD-636 032 AND AD-638 194.

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
*ALGORITHMS), CONTEXT FREE GRAMMARS, CONTEXT
SENSITIVE GRAMMARS, MATHEMATICAL LOGIC,
MATHEMATICAL MODELS (U)

THE PURPOSE OF THIS PAPER IS TO REVIEW AND
SUMMARIZE THE RESULTS PRESENTED IN TEN SCIENTIFIC
REPORTS DURING THE CONTRACT PERIOD. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-640 069 9/2
RAND CORP SANTA MONICA CALIF
DEVELOPMENT OF DISCRETE DIGITAL SIMULATION
LANGUAGES. (U)
SEP 66 15P KIVIAT, PHILIP J. I
REPT. NO. P-3452,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PUBLICATION IN
SIMULATION, THE MONTHLY JOURNAL OF SIMULATION
COUNCILS, INC.

DESCRIPTORS: (PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), SIMULATION, TIME, DYNAMICS,
REVIEWS (U)

THE ARTICLE DEALS WITH A PARTICULAR TYPE OF
SIMULATION: THE USE OF NUMERICAL AND LOGICAL
MODELS TO REPRESENT DISCRETE CHANGES OF STATE OF A
SYSTEM AS IT MOVES THROUGH TIME. SIMULATION MODELS
OF THIS TYPE ARE USUALLY FORMULATED SYMBOLICALLY
USING FLOW CHARTS OR LOGIC DIAGRAMS, CODED IN SOME
PROGRAMMING LANGUAGE, AND RUN ON A DIGITAL COMPUTER.
THE REPORT PRESENTS THE HISTORY, CURRENT STATUS AND
POSSIBLE FUTURE OF DISCRETE DIGITAL SIMULATION
LANGUAGES -- COMPUTER LANGUAGES THAT ARE USED FOR
DESCRIBING THE STRUCTURE AND DYNAMICS OF DISCRETE-
TIME SYSTEMS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-643 821 9/2 9/8
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
GRAPHICS. (U)
DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL SUMMARY REPT. 1
JUN-30 NOV 66,
NOV 66 8P RAFFEL, JACK I. I
CONTRACT: AF 19(628)-5167, ARPA ORDER-691
MONITOR: ESC TR-66-583

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-634 291.

DESCRIPTORS: (*GRAPHICS, *COMPILERS), DISPLAY
SYSTEMS, WAVEFORM GENERATORS, NETWORKS, MAN-
MACHINE SYSTEMS (U)

THE NEW APEX DISPLAY EXECUTIVE IS OPERATIONAL.
THE COMPILER-COMPILER, VITAL, WAS USED TO
GENERATE A NUMBER OF COMPILERS, INCLUDING ONE FOR A
SECOND VERSION OF COPAL. A CRT DISPLAY SEQUENCE IS
BEING CONSTRUCTED WHICH WILL INCORPORATE BOTH THE
NEWLY DESIGNED CONIC WAVEFORM GENERATOR AND A
CHARACTER GENERATOR, AND WILL HANDLE AS MANY AS TEN
DISPLAY STATIONS. THE HARDWARE AND SOFTWARE FOR
THE FIRST PHASE OF THE SDC NETWORK EXPERIMENT ARE
COMPLETED - EXPERIMENTATION IS UNDER WAY.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-644 869 5/7 2/3 9/2 6/4
RAND CORP SANTA MONICA CALIF
SOVIET CYBERNETICS TECHNOLOGY: VIII. REPORT ON THE
ALGORITHMIC LANGUAGE ALGEC (FINAL VERSION). (U)
DEC 66 149P
REPT. NO. RM-5126-PR
CONTRACT: AF 49(628)-1700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF KIBERNETIKA (USSR) N2
P57-102 1966.

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
ECONOMICS), (*ALGORITHMS, PROGRAMMING
LANGUAGES), CYBERNETICS, USSR, COMPUTATIONAL
LINGUISTICS, COMPUTER PROGRAMS, LANGUAGE,
LINGUISTICS, RUSSIAN LANGUAGE, ENGLISH
LANGUAGE (U)

A TRANSLATION OF THE FINAL VERSION OF THE NEW
SOVIET ALGORITHMIC LANGUAGE FOR ECONOMICS
PROBLEMS (ALGEC). A GENERAL-PURPOSE COMPUTER
PROGRAMMING LANGUAGE THAT CAN USE BOTH LATIN AND
CYRILLIC ALPHABETS AND EITHER RUSSIAN OR
ENGLISH RESERVED WORDS. BASED ON ALGOL 60 AND
SUBSET ALGOL 60. ALGEC HAS BEEN MODIFIED TO
PERMIT THE HANDLING OF TABLES, RECORDS INDEXES, ETC.,
AND DOCUMENTS OF COMPLEX FORMAT AND VARIABLE LENGTH;
AND TO PROVIDE A MEANS OF SELECTING AND PROCESSING
INDIVIDUAL ITEMS FROM SUCH DOCUMENTS AND FROM
NONNUMERICAL TEXTUAL MATTER. IDEAS AND INPUT-
OUTPUT PROCEDURES WERE TAKEN FROM COBOL-61. THE
MEMORANDUM INCLUDES A TRANSLATION OF M. KOROLEV'S
ARTICLE ON THE DEVELOPMENT OF ALGEC; A BRIEF
BIOGRAPHICAL NOTE ON THE RUSSIAN AUTHORS AND
EDITOR; A RUSSIAN-ENGLISH GLOSSARY OF ALGEC
TERMINOLOGY; AND AN ENGLISH-RUSSIAN GLOSSARY
INCLUDED IN AN INDEX TO DEFINITIONS OF TERMS AND
SYNTACTIC UNITS. A BIBLIOGRAPHY OF RAND
PUBLICATIONS ON SOVIET CYBERNETICS AND COMPUTER
TECHNOLOGY IS APPENDED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-645 120 9/2
BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS
GROUP
DETECTION OF IMPLICIT COMPUTATIONAL PARALLELISM FROM
INPUT-OUTPUT SETS. (U)
DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. NO. 1, 19
JUL-15 OCT 66,
DEC 66 34P BINGHAM, HARVEY W. I
FISHER, DAVID A. ISEMON, WARREN L. I
CONTRACT: DA-28-043-AMC-02462(E)
PROJ: DA-1E6-20501-A489-02-01
MONITOR: ECOM 02462-1

UNCLASSIFIED REPORT

DESCRIPTORS: (•COMPILERS, •SET THEORY),
(•COMPUTER PROGRAMS, ALGORITHMS), PROGRAMMING
LANGUAGES, GRAPHICS, INPUT-OUTPUT DEVICES (U)

THIS IS THE FIRST REPORT OF AN INVESTIGATION
DESIGNED TO SHOW HOW THE IMPLICIT PARALLELISM IN
PROGRAMS WRITTEN IN PRESENT PROGRAMMING LANGUAGES CAN
BE RECOGNIZED AND EXPLOITED BY COMPUTERS WITH HIGHLY
PARALLEL MACHINE ORGANIZATIONS. A LANGUAGE-
INDEPENDENT RECOGNITION ALGORITHM IS DEVELOPED. A
PROGRAM IS TREATED AS A PARTIALLY ORDERED SET OF
PROCESSES. A PROCESS IS A TRANSFORMATION OF AN
INPUT SET INTO AN OUTPUT SET. THE ALGORITHM
REPRESENTS A METHOD FOR CONVERTING THE GIVEN ORDERING
RELATION AMONG PROCESSES IN ANY GIVEN PROGRAM INTO
THE ESSENTIAL ORDERING RELATION. UNNECESSARY
SERIAL ORDERING IMPOSED BY PRESENT PROGRAMMING
LANGUAGES IS ELIMINATED. THE ESSENTIAL ORDERING IS
RECOGNIZED BY COMPARING INPUTS TO PROCESSES WITH
OUTPUTS OF SELECTED PRIOR PROCESSES. THE NUMBER OF
COMPARISONS IS THE MINIMUM NECESSARY TO DETECT THE
ESSENTIAL ORDERING. THE ALGORITHM IS EXPLAINED IN
DETAIL AND THE EQUIVALENT GRAPHICAL OPERATIONS ARE
DESCRIBED. PROGRAM LOOPS AND CONDITIONALS CAN BE
ANALYZED WITHIN THE FRAMEWORK OF THE ALGORITHM.
PROCESS INPUTS AND OUTPUTS ARE RELATED TO MEMORY
AND INPUT-OUTPUT DEVICES. VARIOUS LEVELS OF
PARTITIONING A PROGRAM INTO PROCESSES ARE DISCUSSED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-645 219 5/7 9/2
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF
ELECTRICAL ENGINEERING
LANGUAGE-NAMING LANGUAGES IN PREFIX FORM, (U)
66 18P GORN, SAUL I
CONTRACT: DA-21-124-AR01D1-98 ,NSF-GP-95
MONITOR: AR02 416615

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN PROCEEDINGS OF THE IFIP
WORKING CONFERENCE ON FORMAL LANGUAGE
DESCRIPTION LANGUAGES P249-68 1966.
SUPPLEMENTARY NOTE: REPT. ON FORMAL LANGUAGE
DESCRIPTION LANGUAGES FOR COMPUTER PROGRAMMING.

DESCRIPTORS: (COMPUTATIONAL LINGUISTICS,
PROGRAMMING (COMPUTERS)); (PROGRAMMING
LANGUAGES, COMPUTER PROGRAMS), LANGUAGE,
SEMANTICS (U)

IN THIS PAPER THE AUTHOR DISCUSSES THE EFFECTS ON
THE SPECIFICATION OF ONE-DIMENSIONAL LANGUAGES AND
THEIR PROCESSORS IF ONE SYSTEMATICALLY USES THE
PREFIX LANGUAGE FUNCTION P. THE SPECIFICATION BY A
COMBINATION OF THEORY AND CONSTRUCTION IS CALLED THE
'STRUCTURE' OR 'ELABORATION' OF A LANGUAGE SYSTEM.
THIS PAPER IS THEREFORE CONCERNED WITH THE EFFECT
OF THE PREFIX LANGUAGE STRUCTURE ON THE SPECIFICATION
OF LANGUAGE STRUCTURES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-649 360 12/1 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
ADEPT, A HEURISTIC PROGRAM FOR PROVING THEOREMS OF
GROUP THEORY. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
SEP 65 181P NORTON, LEWIS MARK I
REPT. NO. MAC-TR-33
CONTRACT: NONR-4102(01)
PROJ: NR-048-189 ,RR-002-09-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS,
*GROUPS(MATHEMATICS)), (*THEOREMS,
GROUPS(MATHEMATICS)), MATHEMATICAL LOGIC,
ARTIFICIAL INTELLIGENCE, DIGITAL COMPUTERS, TIME
SHARING, REAL TIME, THESES (U)
IDENTIFIERS: ADEPT, MULTIPLE ACCESS SYSTEM, ON-
LINE SYSTEMS, HEURISTIC PROGRAM (U)

A COMPUTER PROGRAM, NAMED ADEPT (A DISTINCTLY
EMPIRICAL PROVER OF THEOREMS), HAS BEEN
WRITTEN WHICH PROVES THEOREMS TAKEN FROM THE ABSTRACT
THEORY OF GROUPS. ITS ORGANIZATION IS BASICALLY
HEURISTIC, INCORPORATING MANY OF THE TECHNIQUES OF
THE HUMAN MATHEMATICIAN IN A 'NATURAL' WAY. THIS
PROGRAM HAS PROVED ALMOST 100 THEOREMS, AS WELL AS
SERVING AS A VEHICLE FOR TESTING AND EVALUATING
SPECIAL-PURPOSE HEURISTICS. A DETAILED DESCRIPTION
OF THE PROGRAM IS SUPPLEMENTED BY ACCOUNTS OF ITS
PERFORMANCE ON A NUMBER OF THEOREMS, THUS PROVIDING
MANY INSIGHTS INTO THE PARTICULAR PROBLEMS INHERENT
IN THE DESIGN OF A PROCEDURE CAPABLE OF PROVING A
VARIETY OF THEOREMS FROM THIS DOMAIN. SUGGESTIONS
HAVE BEEN FORMULATED FOR FURTHER EFFORTS ALONG THESE
LINES, AND COMPARISONS WITH RELATED WORK PREVIOUSLY
REPORTED IN THE LITERATURE HAVE BEEN MADE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-646 857 9/2
IIT RESEARCH INST CHICAGO ILL COMPUTER SCIENCES DIV
DIALOG: A CONVERSATIONAL PROGRAMMING SYSTEM WITH A
GRAPHICAL ORIENTATION. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
SEP 66 SOP CAMERON, SCOTT H. ;
EWING, DUNCAN ; LIVERIGHT, MICHAEL ;
REPT. NO. IITRI-TN-109
CONTRACT: NONR-3392(00)
PROJ: RR-003-09-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
*GRAPHICS), (*MAN-MACHINE SYSTEMS, COMPILERS),
OPERATION, ALGEBRA, INPUT-OUTPUT DEVICES,
PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: DIALOG, ON-LINE SYSTEMS (U)

DIALOG IS AN ALGEBRAIC LANGUAGE FOR ON-LINE USE
WITH A GRAPHICAL INPUT-OUTPUT CONSOLE DEVICE. IT
IS A COMPUTATIONAL AID FOR THE CASUAL USER, WHICH
PROVIDES BASIC FACILITIES FOR GRAPHICAL AND NUMERIC
INPUT AND DISPLAY, ON AND OFF-LINE PROGRAM
PREPARATION AND STORAGE, AND HARD COPY PRESENTATION
OF RESULTS. USE OF THE SYSTEM REQUIRES A MINIMUM OF
EXPERIENCE OR INSTRUCTION. SINCE THE GROWTH OF AN
OVERLAYING SYSTEM CONTROL LANGUAGE HAS BEEN
PREVENTED, AND THERE ARE NO PROCESSOR-ORIENTED
STATEMENTS, LIKE VARIABLE TYPE OR DIMENSION
DECLARATIONS. MOREOVER, IN THE ON-LINE SITUATION,
THE PROCESSOR INTERACTS WITH THE GRAPHICAL KEYBOARD
ON A CHARACTER BY CHARACTER BASIS SO AS TO RESTRICT
THE PROGRAMMER'S CHOICE OF INPUT SYMBOLS TO THOSE
WHICH ARE SYNTACTICALLY CORRECT. DIALOG HAS BEEN
IN DAILY OPERATION AT THE IIT RESEARCH INSTITUTE
SINCE FEBRUARY, 1966. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-647 029 5/7 9/2 6/4
RAND CORP SANTA MONICA CALIF
SOVIET CYBERNETICS TECHNOLOGY: IX. ALGEC-SUMMARY AND
CRITIQUE. (U)
FEB 67 49P WIRTH, NIKLAUS I
REPT. NO. RM-4157-PR
CONTRACT: 744620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), (DATA PROCESSING SYSTEMS,
PROGRAMMING LANGUAGES), CYBERNETICS, LANGUAGE,
LINGUISTICS, RUSSIAN LANGUAGE, USSR,
COMPUTATIONAL LINGUISTICS,
PROGRAMMING (COMPUTERS), SYMBOLS (U)

THIS MEMORANDUM CONSISTS OF TWO PARTS: PART
I, CONCERNING THE PRELIMINARY VERSION OF THE ALGEC
REPORT, CONSISTS OF A SUMMARY AND CRITICAL
EVALUATION OF THE FEATURES WHICH WERE ADDED TO
ALGOL 60. PART II, CONCERNING THE FINAL
VERSION, CONTAINS A SIMILAR (SELF-CONTAINED)
SUMMARY OF ADDED FACILITIES AND, AGAIN, AN EVALUATION
WHICH REFLECTS ON THE PROGRESS MADE WITH RESPECT TO
THE PRELIMINARY VERSION. BOTH REPORTS ARE FOUND TO
BE SIGNIFICANTLY LACKING IN PRECISION, CONSISTENCY,
AND CLARITY OF EXPOSITION. ALTHOUGH THE ALGEC
DESCRIPTION COMPARES FAVORABLY WITH MANUALS
DESCRIBING NEW PROGRAMMING LANGUAGES DEVELOPED IN
THIS COUNTRY, IT HARDLY CONSTITUTES A CONTRIBUTION TO
THE STATE OF THE SCIENCE OF PROGRAMMING LANGUAGES.
IMPORTANT ASPECTS OF DATA PROCESSING ARE NOT
REFLECTED IN THE LANGUAGE, SUCH AS INPUT AND OUTPUT.
ONE CAN THEREFORE PREDICT THAT THE 'FINAL' VERSION
OF THE REPORT WILL HARDLY REMAIN FINAL. (U)

UNCLASSIFIED

000289

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-647 418 9/2
RESEARCH ANALYSIS CORP MCLEAN VA
AN INTRODUCTION TO TAB40: A PROCESSOR FOR TABLE-
WRITTEN FORTRAN IV PROGRAMS. (U)
DESCRIPTIVE NOTE: TECHNICAL PAPER,
NOV 66 46P REINWALD, LEWIS T. I
REPT. NO. RAC-TP-229
CONTRACT: DA-44-188-ARD-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, *COMPILERS),
PROGRAMMING LANGUAGES, DECISION MAKING, WAR
GAMES, TABLES (U)
IDENTIFIERS: TAB40, FORTRAN, DECISION TABLES,
IBM 7040 (U)

THE PAPER DESCRIBES TAB40, A PROGRAM WRITTEN AT
RAC FOR THE IBM 7040 COMPUTER. SPECIFICALLY
TAB40 ACCEPTS INPUT WRITTEN IN A PREDOMINANTLY
TABULAR FORMAT AND CONVERTS IT INTO A FREE-FORM
FORMAT ACCEPTABLE FOR COMPILATION BY FORTRAN IV.
THE PAPER BEGINS WITH A BRIEF DISCUSSION OF THE
OBJECTIVES MOTIVATING THE DESIGN OF TAB40. THIS
IS FOLLOWED BY A SUMMARY OF PREVIOUS EXPERIENCE IN
USING TABLES AS AN INSTRUMENT FOR PROBLEM ANALYSIS
AND COMPUTER PROGRAMMING. THEN SOME CONCEPTS
FUNDAMENTAL TO TAB40 ARE INTRODUCED, FOLLOWED BY AN
EXAMPLE SHOWING INPUT TO AND CORRESPONDING OUTPUT
FROM TAB40. THE LAST TWO SECTIONS DESCRIBE IN
DETAIL HOW TO PREPARE INPUT TO BE PROCESSED BY
TAB40. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-647 549 9/2 12/1
NAVAL WEAPONS LAB DAHLGREN VA
THE FLAP LANGUAGE - A PROGRAMMER'S GUIDE. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JAN 67 54P MORRIS, ALFRED H. , JR;
REPT. NO. NWL-TM-K-8/67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-637 127.

DESCRIPTORS: (•PROGRAMMING LANGUAGES, INSTRUCTION
MANUALS), (•PROGRAMMING(COMPUTERS),
•MATHEMATICS), ALGEBRAS, POLYNOMIALS, VECTOR
ANALYSIS, MATRIX ALGEBRA (U)
IDENTIFIERS: FLAP, LISP, IBM 7090 (U)

THE GUIDE IS A PRESENTATION OF THE CAPABILITIES AND
OPERATIONS OF THE LANGUAGE FLAP, A LANGUAGE WRITTEN
FOR THE IBM 7090 THAT ALLOWS AN ANALYST TO HANDLE
SYMBOLIC MATHEMATICAL DATA IN A VARIETY OF WAYS.
EXAMPLES INVOLVING POLYNOMIALS, VECTORS, AND
MATRICES, AS WELL AS OTHER FORMS OF DATA, ARE GIVEN
TO ILLUSTRATE HOW THE LANGUAGE CAN BE EMPLOYED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-646 479 9/2
BALLISTIC RESEARCH LABS ABERDEEN PROVING GROUND MC
BRLESC FORTRAN IV, (U)
OCT 66 99P CAMPBELL, LLOYD W. I
BECK, GLENN A. I
REPT. NO. BRL-1246
PROJ: RDT/E-1P014501A148

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), COMPILERS, MAGNETIC TAPE,
SUBROUTINES (U)
IDENTIFIERS: FORTRAN (U)

FORTRAN IS A POPULAR PROGRAMMING LANGUAGE THAT HAS
BEEN IMPLEMENTED ON MANY COMPUTERS. IT IS
AVAILABLE ON BALLISTIC RESEARCH LABORATORIES'
BRLESC COMPUTER. THE REPORT DESCRIBES THE
FORTRAN LANGUAGE IN GENERAL AND INCLUDES SPECIFIC
DETAILS ABOUT ITS IMPLEMENTATION ON BRLESC.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-649 140 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
VITAL COMPILER SYSTEM: REFERENCE MANUAL. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
FEB 67 82P MONDSHEIN, I. F. I
REPT. NO. TN-1967-12
CONTRACT: AF 19(62M)-3167, ARPA ORDER-691
MONITOR: ESD 67-51

UNCLASSIFIED REPORT

DESCRIPTORS: (COMPIERS, LANGUAGE), DIGITAL
COMPUTERS, PROGRAMMING (COMPUTERS), SEMANTICS,
PROGRAMMING LANGUAGES, ALGORITHMS, COMPUTATIONAL
LINGUISTICS, SYNTAX, SYMBOLS (U)

THIS MANUAL DESCRIBES THE GENERAL OPERATION OF THE
VITAL COMPILER-COMPILER SYSTEM AND THE DETAILS OF
PRODUCTION LANGUAGE (PL) AND FORMAL
SEMANTIC LANGUAGE (FSL). THE APPENDICES
CONTAIN INFORMATION ON THE SYSTEM'S META-COMMANDS, A
GUIDE TO THE USE OF PL, AN EXAMPLE OF AN ALGOL
COMPILER, AND A TABLE OF SYMBOLS USED IN PL AND
FSL. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-649 401 9/2
STANFORD RESEARCH INST MENLO PARK CALIF
SURVEY OF COMPUTER LANGUAGES FOR SYMBOLIC AND
ALGEBRAIC MANIPULATIONS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 67 64P RAPHAEL, BERTRAM I
CONTACT: AF 49(638)-1752
PROJ: AF-9769, SRI-6084
TASK: 976905
MONITOR: AFOSR 67-0811

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), (*DIGITAL COMPUTERS, COMPUTATIONAL
LINGUISTICS), DATA STORAGE SYSTEMS, SYMBOLS,
INFORMATION RETRIEVAL, DECISION MAKING,
COMPILERS, SYNTAX, POWER SERIES, ALGORITHMS,
MATHEMATICAL MODELS (U)

THIS REPORT IS A PREPRINT OF A PAPER SUMMARIZING A
STUDY CONDUCTED BY THE COMPARISON OF LANGUAGES
SUBCOMMITTEE OF THE ACM SPECIAL INTEREST
COMMITTEE ON SYMBOLIC AND ALGEBRAIC
MANIPULATION (SICSAM) ON 18 COMPUTER LANGUAGES
FOR SYMBOLIC AND ALGEBRAIC MANIPULATION THAT MET
CERTAIN CRITERIA OF RELEVANCE AND AVAILABILITY:
ALTRAN, AMBIT, COGENT, COMIT, CONVERT,
CORAL, DYSTAL, FLIP, FORMAC, FORMULA ALGOL,
LPL-V, LISPI-5, LISP2, L6, PANON, SLIP,
SNOBOL, AND TRAC. SEVERAL OTHER LANGUAGES ARE
ALSO BRIEFLY DISCUSSED. FOR EACH OF SIX GROUPS
INTO WHICH THE LANGUAGES ARE CLASSIFIED, THE PAPER
(A) DESCRIBES PROPERTIES THAT MEMBERS OF THE
GROUP HAVE IN COMMON, (B) GIVES A BRIEF
DESCRIPTION OF EACH LANGUAGE IN THE GROUP, INCLUDING
AN EXCERPT FROM A PROGRAM IN THE LANGUAGE THAT
DEMONSTRATES THE KIND OF PROBLEM FOR WHICH THE
LANGUAGE IS WELL SUITED; AND (C) BRIEFLY
COMPARES THE FEATURES OF THE LANGUAGES IN THE GROUP.
THE PAPER CONTAINS THREE APPENDICES: (1) A
REFERENCE CHART THAT SUMMARIZES THE FEATURES OF ALL
OF THE LANGUAGES; (2) A COMPARISON CHART THAT
EMPHASIZES THE SALIENT DISTINCTIONS BETWEEN SELECTED
PAIRS OF SIMILAR LANGUAGES; AND (3) A SET OF
ANNOTATED EXAMPLES OF PROGRAMS IN VARIOUS LANGUAGES
THAT SOLVE SIMILAR PROBLEMS, THUS ILLUSTRATING THE
DIFFERENCES IN DATA REPRESENTATIONS, PROGRAM FORMS,
AND NOTATIONS. THE PAPER IS A COOPERATIVE EFFORT
OF A BOARD OF CONSULTANTS, INCLUDING EXPERTS IN EACH
OF THE LANGUAGES, WHO CONTRIBUTED DATA AND REVIEWED (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-650 845 9/2
BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS
GROUP
DETECTION OF ESSENTIAL ORDERING IMPLICIT IN COMPILER
LANGUAGE PROGRAMS. (U)
DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NO. 2, 15 OCT
66-20 JAN 67;
FE3 67 41P BINGHAM, HARVEY W. ;
FISHER, DAVID A. ; SEMON, WARREN L. ;
REPT. NO. TR-67-1
CONTRACT: DA-28-042-AMC-02462(E)
PROJ: DA-1E6-20501-A-485
TASK: 1E6-20501-A-48502
MONITOR: ECOM 02462-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-645 120

DESCRIPTORS: (*COMPILERS, *PROGRAMMING
LANGUAGES), DIGITAL COMPUTERS, CONTEXT FREE
GRAMMARS, ALGORITHMS, INPUT-OUTPUT DEVICES,
SEQUENCES, SYMBOLS, ITERATIONS (U)

AN INVESTIGATION WAS MADE TO DETERMINE HOW IMPLICIT
PARALLELISM IN PROGRAMS WRITTEN IN COMPILER LANGUAGES
CAN BE RECOGNIZED AND EXPLOITED BY MACHINES WITH
HIGHLY PARALLEL ORGANIZATIONS. AN ALGORITHM IS
DESCRIBED WHICH IDENTIFIES THE COMPLETE SERIAL
ORDERING AMONG PARTS OF A PROGRAM BASED ON THE INPUT-
OUTPUT SETS OF THESE PARTS, THE ORDERING GIVEN BY THE
PROGRAMMER, AND ANY KNOWN ESSENTIAL ORDER AMONG THE
PROGRAM PARTS. THE ALGORITHM IS PROVED AND A
DEMONSTRATION GIVEN THAT A MINIMUM NUMBER OF
COMPARISONS OF INPUT-OUTPUT SETS ARE MADE.
APPLICATION OF THE PARALLEL RECOGNITION PROCEDURE
TO SUBROUTINES, LOOPS, CONDITIONALS, RECURSIVE
SUBROUTINES, AND SERIAL INPUT-OUTPUT DEVICE CALLS IS
EXPLAINED. THE EFFECT OF PARTICULAR FEATURES OF
SEVERAL COMPILER LANGUAGES ON PARALLELISM ARE
DISCUSSED. THESE FEATURES INCLUDE LOOPS, TRANSFERS
OF CONTROL, CONDITIONALS, AND CONDITIONAL SEQUENCES.
REQUIREMENTS FOR REPLACING ITERATIVE LOOP CONTROL
BY PARALLEL PATHS OF CONTROL ARE GIVEN.
ALTERNATIVE ALGORITHMS FOR RECOGNIZING ESSENTIAL
ORDERING ARE SUGGESTED WHICH CAN BE EXECUTED MORE
EFFECTIVELY ON A HIGHLY PARALLEL MACHINE.
APPLICATION OF THE GIVEN ALGORITHM TO THE SYNTACTIC
DEFINITION OF A CONTEXT-FREE LANGUAGE IS ALSO
CONSIDERED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-651 029 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ONE-WAY REAL-TIME LIST-STORAGE LANGUAGES, (U)
JAN 67 47P GINSBURG, SEYMOUR I
HARRISON, MICHAEL A. I
REPT. NO. SCIENTIFIC-2, TM-738/029/00
CONTRACT: F19628-67-C-0008, AF-AFOSR-1203-67
PROJ: AF-5632
TASK: 563205
MONITOR: AFCL 67-0078

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
CALIFORNIA UNIV., BERKELEY.

DESCRIPTORS: (*DATA STORAGE SYSTEMS, PROGRAMMING
LANGUAGES), AUTOMATA, DIGITAL COMPUTERS,
CONTEXT FREE GRAMMARS, REAL TIME, COMPUTER
STORAGE DEVICES (U)
IDENTIFIERS: LISP (U)

A DEVICE IS PRESENTED WHICH HAS ITS MEMORY
ORGANIZED AS A LIST. ATTENTION IS THEN FOCUSED ON
THE AUTOMATON (CALLED AN LSA) WHICH RESULTS WHEN
THE INPUT IS READ ONE-WAY AND THE DEVICE OPERATES IN
REAL TIME. THE SET OF WORDS (CALLED A
LANGUAGE) ACCEPTED BY AN LSA IS EXTENSIVELY
STUDIED. IN PARTICULAR, SEVERAL CHARACTERISTICS
AND CLOSURE PROPERTIES OF LANGUAGES ARE GIVEN.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-653 964 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
A UNIVERSAL PROGRAMMING LANGUAGE (ALGOL 60), (U)
MAR 67 180P LAVROV, S. S. I
REPT. NO. FTD-HT-66-282
MONITOR: TT 67-62148

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MONO.
UNIVERSALNYI YAZYK PROGRAMIROVANIYA (ALGOL 60),
MOSCOW, 1964 171P.

DESCRIPTORS: PROGRAMMING LANGUAGES,
TEXTBOOKS), CODING, SYMBOLS, ALGORITHMS,
COMPUTERS, MATHEMATICS (U)
IDENTIFIERS: ALGOL (U)

THIS BOOK IS A MANUAL FOR THE STUDY OF THE
INTERNATIONAL ALGORITHMIC LANGUAGE ALGOL 60
INTENDED FOR THE COMPLETE AND CONCISE DESCRIPTION OF
COMPUTATION PROCESSES BY MEANS SIMILAR TO THE
CONVENTIONAL MATHEMATICAL SYMBOLISM. THE LANGUAGE
IS AN IMPORTANT AUXILIARY FOR ELECTRONIC COMPUTERS.
THE BOOK IS INTENDED FOR ENGINEERS, WHO HAVE TO
DEAL WITH CALCULATIONS ON ELECTRONIC COMPUTERS IN
THEIR WORK WITHOUT BEING SPECIALLY TRAINED IN THIS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-654 483 12/1 9/2
STANFORD UNIV CALIF OPERATIONS RESEARCH HOUSE
MATHEMATICAL PROGRAMMING LANGUAGE. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUN 67 22P PINSKY, PAUL I
REPT. NO. TR-67-4
CONTRACT: DAMC04-67-C-0028, NL0014-67-A-0112
PROJ: HR-047-C64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY NSF,
AND AEC.

DESCRIPTORS: (MATHEMATICAL PROGRAMMING,
PROGRAMMING LANGUAGES), ALGORITHMS, CODING,
COMPILERS, COMPUTERS, SUBROUTINES (U)

THE GENERAL OBJECTIVE IS TO DEVELOP A HIGHLY
READABLE LANGUAGE FOR PREPARING EXPERIMENTAL PROGRAMS
FOR SOLVING LARGE-SCALE MATHEMATICAL PROGRAMMING
SYSTEMS. A SET OF CONVENTIONS HAVE BEEN
TENTATIVELY AGREED UPON. FOR FLEXIBILITY A PROGRAM
WILL BE MADE UP FROM MODULES CONSISTING OF SHORT
SUBROUTINES. THE LATTER ARE EACH TRANSLATED BY A
HUMAN CODER INTO A STANDARD PROGRAMMING LANGUAGE
(SUCH AS FORTRAN OR ALGOL.) NO PLANS ARE
CONTEMPLATED AT PRESENT FOR A MECHANICAL TRANSLATOR.
(AUTHOR) (U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-657 810 9/2

MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
AN ASSOCIATIVE PROCESSING SYSTEM FOR CONVENTIONAL
DIGITAL COMPUTERS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,

APR 67 26P ROVNER, P. D. IFELDMAN, J.

A. I

REPT. NO. TN-1967-19

CONTRACT: AF 19(628)-9167, ARPA ORDER-691

MONITOR: ESD TR-67-242

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), (*PATTERN RECOGNITION, DIGITAL
COMPUTERS), INFORMATION RETRIEVAL, CODING,
COMPUTER PROGRAMS, TIME SHARING (U)

IDENTIFIERS: ALGOL, ASSOCIATIVE PROCESSOR,
ASSOCIATIVE RETRIEVAL (U)

A USER-ORIENTED SYSTEM HAVING BOTH ALGEBRAIC AND
ASSOCIATIVE PROCESSING CAPABILITIES IS PRESENTED IN
THIS REPORT. THE ALGEBRAIC CAPABILITIES ARE
ESSENTIALLY THOSE OF ALGOL. THE ASSOCIATIVE
FACILITIES ARE: (1) A LANGUAGE FOR THE
EXPRESSION OF ASSOCIATIVE RETRIEVAL REQUESTS (THE
ASSOCIATIVE LANGUAGE). (2) A SCHEME FOR THE
INTERNAL REPRESENTATION OF A STORE OF ASSOCIATIONS
BETWEEN ITEMS OF INFORMATION (AN ASSOCIATIVE
INFORMATION BASE). (3) PROCESSING ROUTINES
FOR ASSOCIATIVE RETRIEVAL REQUESTS. THE
ASSOCIATIVE LANGUAGE IS INDEPENDENT OF THE STRUCTURE
OF THE ASSOCIATIVE INFORMATION BASE. IN THE SYSTEM
PRESENTED HERE, THE ASSOCIATIVE INFORMATION BASE IS
IMPLEMENTED VIA HASH-CODING TECHNIQUES. THE
ASSOCIATIVE LANGUAGE IS IMPLEMENTED BY EXTENDING AN
EXISTING ALGOL SYSTEM. THIS REPORT CONSISTS OF
THREE SECTIONS: SEC. I DESCRIBES THE HIGH-
LEVEL PROGRAMMING LANGUAGE FOR THE OVERALL SYSTEM;
SEC. II OUTLINES THE SCHEME FOR REPRESENTING AN
ASSOCIATIVE INFORMATION BASE; AND SEC. III
SUMMARIZES THE PROCESSING ROUTINES FOR ASSOCIATIVE
RETRIEVAL REQUESTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-655 867 9/2
BUNKROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS
GROUP
PLAN FOR DETECTION OF PARALLELISM IN COMPUTER
PROGRAMS. (U)
DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NO. 3, 21
JAN-21 APR 67,
JUN 67 28P BINGHAM, HARVEY W. I
FISHER, DAVID A. ISEWARD, JOHN W. I
REPT. NO. TR-67-3
CONTRACT: DA-28-043-AMC-02463(E)
PROJ: DA-1E6-20501-A-485
TASK: 1E6-20501-A-485-03
MONITOR: ECOM 02463-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, PROGRAMMING
LANGUAGES), (*COMPUTER PROGRAMS, COMPILERS),
ITERATIVE METHODS, ALGORITHMS (U)
IDENTIFIERS: MULTIPROCESSING, MULTIPROGRAMMING,
ALGOL (U)

THIS IS THE THIRD REPORT OF AN INVESTIGATION TO
DETERMINE HOW IMPLICIT PARALLELISM IN PROGRAMS
WRITTEN IN COMPILER LANGUAGES CAN BE RECOGNIZED AND
EXPLOITED BY MACHINES WITH HIGHLY PARALLEL
ORGANIZATIONS. THE ALGORITHM DEVELOPED IN THE TWO
PRIOR REPORTS FOR DETECTING THE ESSENTIAL ORDER AMONG
PROGRAM PARTS BASED UPON INPUT-OUTPUT SET
INTERSECTIONS AND ANY INITIALLY KNOWN ESSENTIAL
ORDERING HAS BEEN APPLIED IN THIS REPORT TO LOOP AND
ARRAY STRUCTURES. ALTHOUGH PARALLELISM IN MANY
ARRAY REFERENCES CAN BE DETECTED, RUN-TIME INDEX
DETERMINATION LIMITS THE GENERAL RECOGNITION OF ARRAY
ELEMENT PARALLELISM. THE EFFECTS OF DATA
STRUCTURES ON PARALLELISM ARE RELATED TO MACHINE
ORGANIZATION AND MEMORY ACCESSING. THE BLOCK
DIAGRAM OF A PARALLELISM DETECTION PROGRAM IS GIVEN
AND THE SOURCE LANGUAGE FOR PROGRAMS TO BE ANALYZED
IS DESCRIBED. THIS PROGRAM WILL BE USED AS A TOOL
FOR THE DEMONSTRATION OF THE DESIRABILITY AND
FEASIBILITY FOR AUTOMATIC RECOGNITION OF PARALLELISM
IN COMPILER LANGUAGE PROGRAMS. LEVELS OF PROGRAM
PARTITIONING ARE DISCUSSED. A METHOD FOR
IDENTIFYING THE DIFFERENT INSTANCES OF A VARIABLE
DURING A PROGRAM AND THEIR CANDIDACY AS INPUTS FOR
SUBSEQUENT REFERENCES IS DESCRIBED. (AUTHOR) (U)

UNCLASSIFIED

CDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-656 449 9/2
RAND CORP SANTA MONICA CALIF
DATALESS PROGRAMMING, (U)
JUL 67 50P BALZER, R. M. ;
REPT. NO. RM-5290-ARPA
CONTRACT: DAHC15-67-C-0141, ARPA ORDER-189-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
COMPUTERS), (*PROGRAMMING (COMPUTERS), DATA
PROCESSING SYSTEMS), CODING, ALGORITHMS,
ITERATIVE METHODS, ALGEBRA (U)
IDENTIFIERS: DATALESS PROGRAMMING LANGUAGE (U)

THIS MEMORANDUM DESCRIBES THE PRELIMINARY
SPECIFICATIONS OF THE DATALESS PROGRAMMING
LANGUAGE, A HIGH-LEVEL ALGEBRAIC LANGUAGE WHICH IS
AN EXTENSION OF PL/I AND USES ITS SYNTAX (WITH
SOME EXCEPTIONS). SEPARATE SECTIONS OF THE
MEMORANDUM DISCUSS: SPECIFYING HIERARCHICAL DATA
REFERENCES; MAINTAINING THE LANGUAGE'S TWO TYPES OF
POINTERS; DEFINING INDIVIDUAL MEMBERS OF A DATA
COLLECTION; SPECIAL FEATURES OF THE LANGUAGE; ITS
RESTRICTED IMPLEMENTATION; EXPECTED ADVANTAGES AND
DIFFICULTIES. A FINAL SECTION PROVIDES TWO
DATALESS PROGRAMMING EXAMPLES, WITH
COMMENTARIES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-686 771 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS
THE BBN 940 LISP SYSTEM, (U)
JUL 67 128P PORROW, DANIEL G. ;
DARLEY, D. LUCILLE ; DEUTSCH, L. PETER ;
MURPHY, DANIEL L. ; TEITELMAN, WARREN ;
REPT. NO. SCIENTIFIC-9, BBN-1539
CONTRACT: AF 19(628)-5065, ARPA ORDER-627
PROJ: AF-8668
MONITOR: AFCRL 67-0458

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
COMPUTERS), COMPUTER STORAGE DEVICES,
ARTIFICIAL INTELLIGENCE, COMPILERS, SUBROUTINES,
TIME SHARING, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: LISP, SDS 940 COMPUTER, LIST
PROCESSING, ON-LINE SYSTEMS (U)

THE REPORT DESCRIBES THE LISP SYSTEM IMPLEMENTED
AT BBN ON THE SDS 940 COMPUTER. THIS LISP
IS AN UPWARD COMPATIBLE EXTENSION OF LISP 1.5 FOR
THE IBM 7090, WITH A NUMBER OF NEW FEATURES WHICH
MAKE IT WORK WELL AS AN ON-LINE LANGUAGE. THESE
NEW FEATURES INCLUDE TRACING, AND CONDITIONAL
BREAKPOINTS IN FUNCTIONS FOR DEBUGGING AND A
SOPHISTICATED LISP ORIENTED EDITOR. THE BBN
940 LISP SYSTEM HAS A LARGE MEMORY STORE
(APPROXIMATELY 50,000 FREE WORDS) UTILIZING
SPECIAL PAGING TECHNIQUES FOR A DRUM TO PROVIDE
REASONABLE COMPUTATION TIMES. THE SYSTEM INCLUDES
BOTH AN INTERPRETER, A FULLY COMPATIBLE COMPILER, AND
AN ASSEMBLY LANGUAGE FACILITY FOR INSERTING MACHINE
CODE SUBROUTINES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-658 029 9/2
HOME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y
COMPILER GENERATION USING FORMAL SPECIFICATION OF
PROCEDURE-ORIENTED AND MACHINE LANGUAGES. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 67 27P MCLELLAN, WILLIAM G. I
GILBERT, PHILIP I
REPT. NO. RADC-TR-67-454
PROJ: AF-4594

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, *PROGRAMMING
LANGUAGES), SYNTAX, GRAMMARS, CODING,
SYMBOLS (U)
IDENTIFIERS: ALGOL, FORTRAN, JOVIAL (U)

A COMPILER GENERATION SYSTEM IS DESCRIBED WHICH IS
RIGOROUSLY BASED AND WHICH ALLOWS FORMAL
SPECIFICATION BOTH OF THE SOURCE (PROCEDURE
ORIENTED) LANGUAGES AND OF THE OBJECT (MACHINE
ORIENTED) LANGUAGES. AN INTERMEDIATE OR 'BUFFER'
LANGUAGE, BASE, IS INTERPOSED, REDUCING THE
REQUIRED TRANSFORMATION TECHNIQUES DESCRIBED. THE
SYSTEM, SO FAR, INCLUDES THOSE ELEMENTS IN BASE
NECESSARY TO PRODUCE ALGOL, FORTRAN, AND JOVIAL
COMPILERS. THIS PAPER WAS PRESENTED AT THE 1967
SPRING JOINT COMPUTER CONFERENCE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-658 042 9/2
CARNEGIE INST OF TECH PITTSBURGH PA DEPT OF COMPUTER
SCIENCE
A DATA DEFINITION FACILITY FOR PROGRAMMING
LANGUAGES. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
MAY 67 200P STANDISH, T. A. ;
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 67-2045

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, THESES),
(*PROGRAMMING(COMPUTERS), ALGORITHMS),
DIGITAL COMPUTERS, COMPLEX VARIABLES, FLOW
CHARTING, PROBLEM SOLVING, SYNTAX, SEMANTICS,
MAPPING(TRANSFORMATIONS) (U)

THE DISSERTATION PRESENTS A DESCRIPTIVE NOTATION
FOR DATA STRUCTURES WHICH IS EMBEDDED IN A
PROGRAMMING LANGUAGE IN SUCH A WAY THAT THE RESULTING
LANGUAGE BEHAVES AS A SYNTHETIC TOOL FOR DESCRIBING
DATA AND PROCESSES IN A NUMBER OF APPLICATION AREAS.
A SERIES OF EXAMPLES INCLUDING FORMULAE, LISTS,
FLOW CHARTS, ALGOL TEXT, FILES, MATRICES, ORGANIC
MOLECULES AND COMPLEX VARIABLES IS PRESENTED TO
EXPLORE THE USE OF THIS TOOL. IN ADDITION, A SMALL
FORMAL TREATMENT IS GIVEN DEALING WITH THE
EQUIVALENCE OF EVALUATORS AND THEIR DATA
STRUCTURES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-658 418 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 COMPILER CONTEXT RESOLVER LANGUAGE AND
PROCESSOR SPECIFICATIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
APR 67 28P BARNETT, J. I
REPT. NO. TM-3417/340/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIGITAL COMPUTERS, *PROGRAMMING
LANGUAGES), (*COMPILERS, DIGITAL COMPUTERS),
DATA STORAGE SYSTEMS, SYNTAX (U)
IDENTIFIERS: LISP, IBM 360 (U)

THE DOCUMENT DESCRIBES THE LANGUAGE AND PROCESSOR
REQUIRED FOR THE CONTEXT RESOLVER PASS OF THE
LISP 2 COMPILER PROPOSED FOR THE IBM S/360
COMPUTER. THE CONTEXT RESOLVER (PASS II OF
THE LISP 2 COMPILER) IS USED TO MACRO-EXPAND
INTERMEDIATE LANGUAGE INPUTS INTO A LIST OF
CONTEXT-RESOLVED INTERLUDE LANGUAGE FUNCTION
DEFINITIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-658 423 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 DOCUMENT CONVENTIONS.

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
APR 67 7P WILLS, R. J

(U)

REPT. NO. TM-3417/001/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *SYNTAX),
(*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES),
SYSTEMS ENGINEERING, SYMBOLS, SEMANTICS,
STANDARDIZATION

IDENTIFIERS: LISP, IBM 360

(U)

(U)

THE DOCUMENT DESCRIBES CONVENTIONS USED IN A SERIES
OF DOCUMENTS WHICH SPECIFY THE LISP 2 LANGUAGE AND
PROCESSOR FOR THE IBM S/360 COMPUTER. INCLUDED
IN THIS DOCUMENT ARE RULES FOR WRITING SYNTAX
EQUATIONS FOR THE LISP 2 LANGUAGE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-659 421 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 LANGUAGE SPECIFICATIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
APR 67 49P FIRTH, DONNA IABRAHMS, P. I
REPT. NO. TM-3417/200/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
INFORMATIONAL INTERNATIONAL, INC., LOS ANGELES,
CALIF.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *SYNTAX),
(*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES),
SEMANTICS, SYMBOLS, CODING (U)
IDENTIFIERS: LISP, IBM 360 (U)

THE DOCUMENT DESCRIBES THE PROPOSED SYNTAX AND
SEMANTICS FOR THE LISP 2 SOURCE LANGUAGE (SL)
AND INTERMEDIATE LANGUAGE (IL) TO BE
IMPLEMENTED ON THE IBM S/360 COMPUTER. THE
SYNTAX OF TOKENS IS ALSO INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-659 156 9/2 12/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE
A PRELIMINARY SKETCH OF FORMULA ALGOL. (U)
DESCRIPTIVE NOTE: REVISED ED.,
JUL 65 58P PERLIS, ALAN J. ;
ITURRAGA, RENATO ; STANDISH, THOMAS ;
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 67-2207

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
*MATHEMATICAL LOGIC), ALGORITHMS, ALGEBRA,
TAYLOR'S SERIES, SYMBOLS, SYNTAX,
OPERATORS(MATHEMATICS), DATA STORAGE SYSTEMS,
PROGRAMMING(COMPUTERS) (U)

IN EARLIER YEARS ALGEBRAIC LANGUAGES, LIST
PROCESSING LANGUAGES AND STRING MANIPULATING
LANGUAGES HAVE EXISTED SEPARATELY FROM ONE ANOTHER.
RECENTLY, FORMULA MANIPULATING LANGUAGES HAVE
EVOLVED, AND, IN ADDITION, THERE HAVE BEEN EFFORTS TO
COMBINE VARIOUS DIFFERENT KINDS OF PROCESSING INTO
ONE LANGUAGE. THE DESIGN OF FORMULA ALGOL
REPRESENTS AN EFFORT IN THIS DIRECTION.
SPECIFICALLY, FORMULA ALGOL IS AN EXTENSION TO
ALGOL PROVIDING FORMULA MANIPULATING, LIST
PROCESSING, AND LIMITED STRING CAPABILITIES. THUS,
FORMULA ALGOL IS A LANGUAGE IN WHICH THE
ADVANTAGES OF THESE VARIOUS DIFFERENT KINDS OF
PROCESSING ARE COMBINED, BUT WE ANTICIPATE THAT
FORMULA ALGOL WILL BE PARTICULARLY WELL ADAPTED
TO ALGEBRAIC SYMBOL MANIPULATING PROCESSES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-659 358 7/2
RAND CORP SANTA MONICA CALIF
COMPUTER SIMULATION PROGRAMMING LANGUAGES:
PERSPECTIVE AND PROGNOSIS. (U)
SEP 67 23P KIVIAT, PHILIP J. I
REPT. NO. P-3599

UNCLASSIFIED REPORT

DESCRIPTORS: 1. PROGRAMMING LANGUAGES,
SIMULATION), COMPILERS, TIME SHARING,
COMPUTERS, MODELS(SIMULATIONS),
PROGRAMMING(COMPUTERS), FLOW CHARTING,
SCHEDULING, GRAPHICS (U)

SIMULATION PROGRAMMING LANGUAGES HAVE BEEN GOING THROUGH RAPID EVOLUTIONARY CHANGES. BEFORE 1959 THERE WERE NO SIMULATION LANGUAGES--THERE WERE ONLY SIMULATION PROGRAMS. SINCE 1959, WHEN THE FIRST PROGRAMMING LANGUAGES DESIGNED ESPECIALLY FOR SIMULATION APPEARED, MANY DIFFERENT SIMULATION MODELING AND PROGRAMMING SYSTEMS HAVE BEEN PROPOSED. AT LEAST FIVE UNEQUALLY DIFFERENT MODELING SCHEMES HAVE FOUND WIDESPREAD ACCEPTANCE AND USE. A LARGE AMOUNT OF MODELING AND PROGRAMMING EXPERIENCE HAS BEEN ACCUMULATED WHICH SIMULATION LANGUAGE DESIGNERS ARE NOW TAKING FULL ADVANTAGE OF. IN THIS PAPER WE FIRST DISCUSS SOME THEORIES OF SIMULATION MODELING AND PROGRAMMING. WE THEN DESCRIBE THE DESIGN AIMS AND A FEW OF THE LANGUAGE FACILITIES OF SEVERAL 'SECOND GENERATION' SIMULATION PROGRAMMING LANGUAGES. FINALLY, WE COMMENT ON A PROBABLE FUTURE FOR SIMULATION LANGUAGES AND SIMULATION PROGRAMMING. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-666 089 9/2 9/2
LEHIGH UNIV BETHLEHEM PA CENTER FOR THE INFORMATION
SCIENCES
GRINS: AN ON-LINE STRUCTURE FOR THE NEGOTIATION OF
INQUIRIES. (U)
DESCRIPTIVE NOTE: MASTER THESIS.
SEP 67 66P GREEN, JAMES SPROAT I
REPT. NO. 4
CONTRACT: AF-4F05R-724-66
PROJ: AF-4765
TASK: 976901

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON 'STUDIES IN THE MAN-
SYSTEMS INTERFACE IN LIBRARIES.' SEE ALSO AD-699
458.

DESCRIPTORS: (LIBRARIES, INFORMATION
RETRIEVAL), (INFORMATION RETRIEVAL, COMPUTER
PROGRAMS), SEARCH THEORY, EFFECTIVENESS,
EFFICIENCY, MAN-MACHINE SYSTEMS, TECHNICAL
INFORMATION CENTERS, DOCUMENTATION
IDENTIFIERS: GRINS, ON-LINE SYSTEMS (U)
(U)

IN GENERAL, PROBLEMS ARE SOLVABLE ALONG A CONTINUUM
OF ABSTRACTION. THERE IS, AT ANY GIVEN POINT IN
THE DEVELOPMENT OF THE SOLUTION, A MOST EFFICIENT OR
OPTIMUM STRATEGY. IN INFORMATION RETRIEVAL SYSTEMS
THE ULTIMATE SOLUTION IS OBTAINED AT A MORE SPECIFIC
RATHER THAN AT A MORE ABSTRACT LEVEL. THE QUESTION
NEGOTIATION PROCESS IS VIEWED AS AN EFFICIENT
PRELIMINARY STRATEGY WHICH ENABLES AN INFORMATION
SEEKER TO OBTAIN HIS INFORMATION GOAL WITH THE LEAST
AMOUNT OF OVERALL EFFORT. IN ORDER FOR A PROBLEM
SOLUTION PROCEDURE TO REMAIN EFFICIENT A MEANS FOR
PREDICTING WHEN TO CHANGE STRATEGIES MUST BE
PROVIDED. IN THE PARTICULAR EXAMPLE OF QUESTION
NEGOTIATION THIS PREDICTION IS BASED ON THE RATE AT
WHICH THE DEFINITION OF THE USER'S NEED DEVELOPS.
AN ON-LINE COMPUTER PROGRAM CALLED GRINS IS
DESCRIBED WHICH IMPLEMENTS THE INFORMATION
SPECIALIST'S ROLE IN THE NEGOTIATING OF A USER'S
NEED. THIS PROGRAM COMMUNICATES WITH THE USER IN
HIS NATURAL CONVERSATIONAL IDIOM. WHEN THE
NEGOTIATION IS JUDGED BY GRINS TO BE AS WELL
DEVELOPED AS IT IS LIKELY TO GET, A SEARCH IS MADE OF
THE AVAILABLE DOCUMENTS. THIS SEARCH PRODUCES AN
ORDERED LIST OF THE SIXTY-THREE BEST DOCUMENTS WHICH
COME CLOSEST TO THE USER'S EXPRESSED NEED. THE
STRUCTURE OF THE PROGRAM IS MODULAR SO THAT
IMPROVEMENTS MAY BE EASILY MADE. SOME SUCH

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-660 127 12/1 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE
CONTRIBUTIONS TO MECHANICAL MATHEMATICS. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
MAY 67 221P ITURRIAGA, RENATO ;
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 67-2400

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, PROBLEM
SOLVING), (*MATHEMATICS, COMPUTERS),
TRANSFORMATIONS(MATHEMATICS), THESES,
ALGEBRA, ADAPTIVE SYSTEMS, METAMATHEMATICS,
DIFFERENTIAL EQUATIONS, ALGORITHMS,
INEQUALITIES, SEQUENCES, ITERATIVE METHODS,
TAYLOR'S SERIES, POLYNOMIALS (U)
IDENTIFIERS: FORMULA ALGOL, MECHANICAL
MATHEMATICS (U)

WE DESCRIBE THE EXPERIENCE RELATING TO THE DESIGN
OF A PROGRAMMING LANGUAGE, FORMULA ALGOL, WHICH
IS SUITABLE FOR DESCRIBING ALGORITHMS THAT MECHANIZE
SOME MATHEMATICAL TASKS. WE DEVELOP A THEORY THAT
YIELDS RESULTS FROM WHICH WE CAN PROVE THE
TERMINATION OF SOME MARKOV ALGORITHMS THAT PERFORM
ALGEBRAIC TRANSFORMATIONS. USING THESE RESULTS, WE
ALSO CAN CHARACTERIZE THE CLASSES OF FORMULAE THAT
CONSTITUTE THE INPUT AND OUTPUT FOR SUCH ALGORITHMS.
NEXT, WE DISCUSS IN SOME DETAIL THE VARIOUS
PROBLEMS RELATED TO THE MECHANIZATION OF LIMITING
PROCESSES AND INEQUALITIES. TWENTY-FIVE
APPENDICES--WITH RUNNING PROGRAMS--ILLUSTRATE THE
VARIOUS POINTS MADE DURING OUR PRESENTATION.
(AUTHOR) (U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-660 252 14/4 12/1 9/2
COMPUTER APPLICATIONS INC NEW YORK
FARADA INFORMATION PROCESSING AND PRESENTATION STUDY.
VOLUME 2. COMPUTER SYSTEM MANUAL. (U)
JUG 66 135P
REPT. NO. CAI-NY-6.55
CONTRACT: N1231627261-51870A(1A)
MONITOR: ICEP 347.40.00.00-X1-01

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN COPYRIGHTED
JOURNAL.

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-660 251 AND
VOLUME 3, AD-660 253.

DESCRIPTORS: (*RELIABILITY, *STATISTICAL
ANALYSIS), (*SAMPLING, RELIABILITY),
(*COMPUTER PROGRAMS, STATISTICAL ANALYSIS),
FLOW CHARTING, SUBROUTINES, DATA PROCESSING
SYSTEMS

(U)

IDENTIFIERS: FARADA, ON-LINE SYSTEMS

(U)

THIS VOLUME DESCRIBES IN DETAIL THE SET OF COMPUTER
PROGRAMS (CALLED THE FARADA SYSTEM) DEVELOPED
TO PERFORM THE INFORMATION-PROCESSING AND
PRESENTATION SYSTEM OBJECTIVES PRESENTED IN THE
COMPANION VOLUME 1 'STUDY AND ANALYSES.'
DETAILED SYSTEM AND TASK BLOCK DIAGRAMS AND FLOW
CHARTS ARE PRESENTED. THESE BLOCK DIAGRAMS AND
CHARTS, TOGETHER WITH THE DETAILED DESCRIPTION GIVEN
FOR EACH TASK, PROVIDE THE USER WITH ALL THE
INFORMATION NECESSARY TO USE OR MODIFY THE PROGRAMS
OF THE COMPUTER SYSTEM.

(U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-660 252 14/4 12/1 9/2
COMPUTER APPLICATIONS INC NEW YORK
FARADA INFORMATION PROCESSING AND PRESENTATION STUDY.
VOLUME 2. OPERATORS MANUAL. (U)
AUG 66 22P
REPT. NO. CAI-NY-8155
CONTRACT: N123(62738)-51870A(X)
MONITOR: IDEP 247.40.00.00-X1-01

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN COPYRIGHTED
JOURNAL.

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-660 251 AND
VOLUME 2, AD-660 252.

DESCRIPTORS: (*RELIABILITY, *STATISTICAL
ANALYSIS), (*SAMPLING, RELIABILITY), (*DATA
PROCESSING SYSTEMS, INSTRUCTION MANUALS), INPUT-
OUTPUT DEVICES, DISPLAY SYSTEMS, FLOW CHARTING (U)
IDENTIFIERS: FARADA, ON-LINE SYSTEMS (U)

THIS VOLUME IS AN OPERATOR'S MANUAL GIVING DETAILED
STEP-BY-STEP OPERATING INSTRUCTIONS FOR RUNNING THE
FARADA COMPUTER SYSTEM ON THE IBM 1460 AND 7094
DIGITAL COMPUTERS. THE FARADA PROCESSING
ROUTINES CAN BE STOPPED AND STARTED AFTER ANY OF THE
COMPONENT PROGRAMS BY REFERRING TO THE CLEARLY
LABELED OPERATING INSTRUCTIONS. (U)

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DDI REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 548 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS
DESIGN AND IMPLEMENTATION OF FLIP, A LISP FORMAT
DIRECTED LIST PROCESSOR, (U)
JUL 67 118P TEITELMAN, WARREN I
REPT. NO. SCIENTIFIC-10, RBN-1495
CONTRACT: AF 19(628)-5065, ARPA ORDER-627
PROJ: AF-0668
MONITOR: AFCRL 67-0514

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES,
COMPUTERS), PROGRAMMING (COMPUTERS), MAN-
MACHINE SYSTEMS, SYMBOLS, CODING, SYNTAX (U)
IDENTIFIERS: LISP, LIST PROCESSING, FLIP (U)

THE PAPER DISCUSSES SOME OF THE CONSIDERATIONS INVOLVED IN DESIGNING AND IMPLEMENTING A PATTERN MATCHING OR 'COMIT' FEATURE INSIDE OF LISP. THE PROGRAMMING LANGUAGE FLIP IS PRESENTED HERE AS A PARADIGM FOR SUCH A FEATURE. THE DESIGN AND IMPLEMENTATION OF FLIP DISCUSSED BELOW EMPHASIZES COMPACT NOTATION AND EFFICIENCY OF OPERATION. IN ADDITION, FLIP IS A MODULAR LANGUAGE AND CAN BE READILY EXTENDED AND GENERALIZED TO INCLUDE FEATURES FOUND IN OTHER PATTERN DRIVEN LANGUAGES SUCH AS CONVERT AND SNOBOL. THIS MAKES IT EXTREMELY VERSATILE. THE DEVELOPMENT OF THIS PAPER PROCEEDS FROM ABSTRACT CONSIDERATIONS TO SPECIFIC DETAILS. THE SYNTAX AND SEMANTICS OF FLIP ARE PRESENTED FIRST, FOLLOWED BY A DISCUSSION OF THE IMPLEMENTATION WITH ESPECIAL ATTENTION DEVOTED TO TECHNIQUES USED FOR REDUCING THE NUMBER OF CONSES REQUIRED AS WELL AS IMPROVING SEARCH STRATEGY. FINALLY FLIP IS TREATED AS A WORKING SYSTEM AND VIEWED FROM THE USER'S STANDPOINT. HERE WE PRESENT SOME OF THE ADDITIONS AND EXTENSIONS TO FLIP THAT HAVE EVOLVED OUT OF ALMOST TWO YEARS OF EXPERIMENTATION. THESE TRANSFORM IT FROM A NOTATIONAL SYSTEM INTO A PRACTICAL AND USEFUL PROGRAMMING SYSTEM. (U)
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 576 9/2
PERSONNEL RESEARCH LAB LACKLAND AFB TEX
INTRODUCTION TO PERSUB,
AUG 67 97P WARD, JOE H. , JR;
BUCHHORN, JANICE HALL, KATHLEEN I
REPT. NO. PRL-TR-67-3-PT-1
PROJ: AF-7719
TASK: 771901

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 2, AD-660 579.

DESCRIPTORS: (•DATA PROCESSING SYSTEMS,
INSTRUCTION MANUALS),
(•PROGRAMMING (COMPUTERS), SUBROUTINES),
FLOW CHARTING, PUNCHED CARDS, CODING, MAN-
MACHINE SYSTEMS, FACTOR ANALYSIS, PROBLEM SOLVING,
REGRESSION ANALYSIS, CORRELATION TECHNIQUES
IDENTIFIERS: PERSUB

(U)

(U)

FOUR EXAMPLES OF THE APPLICATION OF THE PERSUB
SUBROUTINE SYSTEM TO DATA ANALYSIS PROBLEMS ARE
PRESENTED. EXAMPLES OF ALL STEPS INVOLVED IN DATA
PREPARATION, FLOW CHART OF COMPUTATIONAL STEPS,
CODING OF PROGRAM INSTRUCTIONS, COMPILING AND
EXECUTING THE PROGRAM ARE PRESENTED IN DETAIL. THE
LISTING OF EACH PROGRAM WITH CORRESPONDING RESULTS IS
PRESENTED. A SECOND VERSION OF EACH PROGRAM
CONTAINING EXTENSIVE COMMENTS IS ALSO INCLUDED.
(AUTHOR)

(U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-660 579 9/2
PERSONNEL RESEARCH LAB LACKLAND AFB TEX
PERSUB REFERENCE MANUAL, (U)
AUG 67 67P WARD, JOE H. , JRI
MALL, KATHLEEN ; BUCHHORN, JANICE ;
REPT. NO. PRL-TR-67-3-PT-2
PROJ: AF-7719
TASK: 771901

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 1, AD-660 578.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS,
INSTRUCTION MANUALS),
(*PROGRAMMING (COMPUTERS), SUBROUTINES),
PULCHED CARDS, CODING, MAN-MACHINE SYSTEMS,
REGRESSION ANALYSIS, FACTOR ANALYSIS, PROBLEM
SOLVING, STATISTICAL ANALYSIS, CORRELATION
TECHNIQUES (U)
IDENTIFIERS: PERSUB (U)

THIS REPORT DESCRIBES THE PERSUB SUBROUTINE
SYSTEM. PERSUB IS A SET OF MATRIX-ORIENTED
SUBROUTINES DEVELOPED PRIMARILY FOR THE PURPOSE OF
PROVIDING THE RESEARCHER A MAXIMUM OF FLEXIBILITY IN
DESIGNING A SEQUENCE OF ANALYSES TO BE CARRIED OUT ON
RESEARCH DATA. WITH A FEW MINOR EXCEPTIONS, THE
SYSTEM IS WRITTEN ENTIRELY IN FORTRAN. THE
REPORT CONTAINS A LISTING OF THE SOURCE PROGRAM AND A
BRIEF DESCRIPTION OF EACH SUBROUTINE. THE SYSTEM
WAS ORIGINALLY DEVELOPED FOR USE ON A 16K IBM
7040 WITH TWO CHANNELS, THREE TAPE UNITS PER CHANNEL,
AND ONE DISK UNIT. IT SHOULD COMPILE AND RUN WITH
FEW MODIFICATIONS ON ANY SIMILAR CONFIGURATION WITH A
LARGER CORE OR ADDITIONAL PERIPHERAL UNITS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-660 985 9/2 9/7
CARNEGIE INST OF TECH PITTSBURGH PA DEPT OF COMPUTER
SCIENCE
SOL-20. (U)
DESCRIPTIVE NOTE: SCIENTIFIC INTERIM,
APR 65 50P HANSEN, GILBERT J. ;
CONTRACT: SD-146
MONITOR: AFOSR 67-2516

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SYNTAX),
PROGRAMMING (COMPUTERS), DATA STORAGE SYSTEMS,
SIMULATION, CODING, SEMANTICS (U)
IDENTIFIERS: SOL; SOL-20, ALGOL (U)

THIS MANUAL IS A SUPPLEMENT TO THE ORIGINAL ARTICLE
(INCLUDED AS AN APPENDIX) A FORMAL DEFINITION OF
SOL BY KNUTH AND MCNELEY. THE VERSION OF
SOL DESCRIBED HERE, KNOWN AS SOL-20, WAS
IMPLEMENTED BY PROCEDURES WRITTEN IN ALGOL-20 AND
G-20 MACHINE LANGUAGES. IT IS THE PURPOSE OF
THIS DOCUMENTATION TO DESCRIBE IN DETAIL EXACT
DIFFERENCES AND CHANGES IN SYNTAX BETWEEN SOL AND
SOL-20. WITH SOME LIMITATIONS, THE FULL POWER OF
ALGOL-20 (THE LOCAL CARNEGIE-MELLON
UNIVERSITY VERSION OF THE INTERNATIONAL LANGUAGE
ALGOL-60) IS AVAILABLE FOR PROGRAMMING IN SOL-
20. A SOL-20 PROGRAM IS WRITTEN USING SOL-20
SYSTEM PROCEDURES WHICH IMPLEMENT SOL DECLARATIONS,
EXPRESSIONS, RELATIONS AND STATEMENTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 076 9/2

PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF
ELECTRICAL ENGINEERING

LIST PROCESSING RESEARCH TECHNIQUES.

(U)

DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 3, 13 DEC-14 APR
67.

SEP 67 198P CARR, J. W., ELLI GRAY, H.

J. 1

REPT. NO. 68-03

CONTRACT: DA-28-043-AMC-02377(E)

PROJ: DA-IEO.20401.A327

TASK: IEO.20401.A327.03

MONITOR: ECOM 02377-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 720.

DESCRIPTORS: (*COMPUTER STORAGE DEVICES,
FEASIBILITY STUDIES), (*PROGRAMMING LANGUAGES,
FEASIBILITY STUDIES), DATA PROCESSING SYSTEMS,
RECURSIVE FUNCTIONS, FLOW CHARTING, SUBROUTINES,
CODING

(U)

IDENTIFIERS: SPRINT, LIST PROCESSING

(U)

THIS IS THE THIRD REPORT OF AN INVESTIGATION ON THE
FORMAL CHARACTERISTICS AND FEASIBILITY OF THE
POTENTIAL AND UTILIZATION OF PUSH-DOWN TYPE COMPUTER
MEMORIES. LIST PROCESSING LANGUAGE DEVELOPMENT IN
THIS STUDY CONCERNS THE REFINEMENT OF THE SPRINT
LANGUAGE, AN EXPERIMENTAL, POPEFULLY USEFUL, AND
SIMPLE LIST PROCESSING LANGUAGE. WORK HAS
CONTINUED ON THE GROWING MACHINE, A CONTEXT-FREE
DEFINITIONAL STRUCTURE, AND ITS DEVELOPMENT IS
CONSIDERED TO BE A TEST-BED FOR LIST-PROCESSING
DEVELOPMENT. PROGRESS HAS BEEN MADE IN THE
FOLLOWING AREAS: (1) NEW SOFTWARE, (2)
APPLICATIONS OF LIST MEMORIES, AND (3)
APPLICATIONS OF SPRINT AND THE GROWING
MACHINE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-661 259 9/2
RAND CORP SANTA MONICA CALIF
JOSS LANGUAGE.

(U)

AUG 67 22P BRYAN, G. E. ; SMITH, J. W.

REPT. NO. RM-5377-PR
CONTRACT: F-44620-67-C-0043

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, INSTRUCTION
MANUALS), TIME SHARING, MAN-MACHINE SYSTEMS,
PROBLEM SOLVING

(U)

IDENTIFIERS: JOSS, ON-LINE SYSTEMS

(U)

THIS IS A JOSS USER'S PORTFOLIO CONTAINING THREE
BRIEF REFERENCE SUMMARIES OF THE ACTIONS THAT CAN BE
REQUESTED OF JOSS AND OF THE LANGUAGE FOR
REQUESTING THESE ACTIONS. THE SUMMARIES ARE
PRESENTED IN VARYING FORMATS TO SUIT THE USER'S
CONVENIENCE: A POCKET-SIZE BOOK FOR PERSONAL USE
(POCKET PRECIS, 17 PP.), A LARGER AND MORE
COMPLETE PIECE FOR DESK-TOP OR CONSOLE USE (APERCU
AND PRECIS, 23 PP.), AND A POSTER-SIZE SUMMARY
FOR THE BULLETIN BOARD (POSTER PRECIS, 1 P.).
THE PRECIS DEMONSTRATE THAT THE LANGUAGE PROVIDED
FOR JOSS IS TERSE, UNAMBIGUOUS, AND READABLE,
STRESSING FAMILIAR ENGLISH TERMINOLOGY AND
PUNCTUATION AND USE. THE SPEED AND EASE OF
INTERACTION BETWEEN JOSS AND THE USER, THE
SIMPLICITY OF THE LANGUAGE, THE USE OF FAMILIAR
DECIMAL ARITHMETIC, AND JOSS'S PRECISE ERROR AND
STATUS REPORTING COMBINE TO ALLOW MOST PROBLEMS TO BE
SOLVED BY AN UNDERSTANDING OF THE PROBLEM AT HAND AND
A LIST OF JOSS COMMANDS AND FUNCTIONS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-561 539 9/2

RAND CORP SANTA MONICA CALIF

JOSS: CENTRAL PROCESSING ROUTINES;

(U)

AUG 67 188P SMITH, J. W. I

REPT. NO. RM-5270-PR

CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIME SHARING, DATA PROCESSING
SYSTEMS), (*PROGRAMMING (COMPUTERS),
INSTRUCTION MANUALS), SUBROUTINES, FLOW
CHARTING, MAN-MACHINE SYSTEMS, PROGRAMMING
LANGUAGES

(U)

IDENTIFIERS: JOSS, ON-LINE SYSTEMS

(U)

THIS IS A REFERENCE GUIDE FOR JOSS USERS TO
(1) THE LANGUAGE USED FOR COUCHING INSTRUCTIONS
TO JOSS; (2) JOSS'S RESPONSES TO
INSTRUCTIONS; (3) THE COLLECTION OF MACHINE-
LANGUAGE ROUTINES (IN JOSS'S CENTRAL COMPUTER)
RESPONSIBLE FOR INTERPRETING AND RESPONDING TO
INSTRUCTIONS; AND (4) THE DETAILS AND DECISIONS
THAT BILATERALLY INFLUENCED THE LANGUAGE AND THE
DESIGN AND IMPLEMENTATION OF THE ROUTINES. THE
MYRIAD DETAILS OF TOTAL SYSTEM DESIGN ARE GIVEN
CONSTANT EXPOSURE, AND PARTICULAR EMPHASIS IS PLACED
ON THE DELICATE BALANCE AND SYMBIOSIS THAT MUST EXIST
AMONG SYSTEM, LANGUAGE, COMPUTER, AND ROUTINES AND ON
THE PERVASIVE EFFECTS OF EACH COMPONENT ON THE
OTHERS. THE MATERIAL IS PRESENTED IN A NARRATIVE
FORM, AUGMENTED BY FLOW-CHART REPRESENTATIONS OF MOST
OF THE PRINCIPAL ROUTINES, AND IS IN PART DESIGNED TO
SERVE AS PROLEGOMENA TO THE ANNOTATED MACHINE-
LANGUAGE LISTINGS OF THE ROUTINES (COPIES OF WHICH
ARE OBTAINABLE FROM RAND). (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-661 591 9/2
RCA LABS PRINCETON N J
AN INTRODUCTION TO CDLI, A COMPUTER DESCRIPTION
LANGUAGE, (U)
SEP 67 128P SRINIVASAN, CHITTOOR V. I
REPT. NO. SCIENTIFIC-1
CONTRACT: AF 19(628)-4789
PROJ: AF-5632
TASK: 562202
MONITOR: AFRL 67-0565

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES, DESIGN),
INFORMATION RETRIEVAL, DOCUMENTATION,
SIMULATION, MAGNETIC CORE STORAGE, SYNTAX (U)
IDENTIFIERS: CDLI (U)

THE OBJECTIVE OF THIS REPORT IS TO DEVELOP A FORMAL LANGUAGE TO DESCRIBE HARDWARE AND SOFTWARE COMPUTING SYSTEMS. THE LANGUAGE IS TO PROVIDE A LINGUISTIC BASIS TO CONSIDER MACHINE-AIDED SOLUTIONS OF A VARIETY OF DESIGN PROBLEMS; I.E., PROBLEMS CONCERNING DESIGN DOCUMENTATION, DATA RETRIEVAL SYSTEMS, SYSTEM SIMULATION, DIAGNOSIS, ANALYSIS AND SYNTHESIS. THIS REPORT DISCUSSES IN SOME DETAIL THE CONSIDERATIONS THAT WENT INTO THE DESIGN OF THE COMPUTER DESCRIPTION LANGUAGE, CALLED CDLI; IT POINTS OUT THE NEED FOR DEVELOPING SUCH A LANGUAGE AND BRIEFLY DISCUSSES THE KINDS OF APPLICATIONS SUCH A LANGUAGE MAY HAVE. THE REPORT POINTS OUT THE VARIOUS KINDS OF SYSTEM DESCRIPTIONS ONE MAY ENCOUNTER IN A DESIGN PROCESS AND RELATES THEM TO THE LANGUAGE FEATURES NECESSARY TO EXPRESS THEM; THE LANGUAGE ITSELF IS DESCRIBED INFORMALLY. EXAMPLES ARE PRESENTED TO ILLUSTRATE THE USE OF THE LANGUAGE, THE CONCEPTS ASSOCIATED WITH DESCRIPTIONS OF SYSTEMS AT VARIOUS STAGES OF DESIGN, AND THE CONSEQUENT HIERARCHICAL STRUCTURE SUCH DESCRIPTIONS ACQUIRE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-561 773 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
AUTOMATIC MONITORING OF THE CORRECT RECORDING OF
ALGORITHMS IN THE ALGOL-60 LANGUAGE. (U)
JUN 67 33P VASILEV, V. A. I
LOZINSKII, N. N. I
REPT. NO. FTD-MT-67-78

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF ZHURNAL
VYCHISLITELNOI MATEMATIKI I MATEMATICHESKOI FIZIKI
(USSR) V6 N1 P120-47 1966.

DESCRIPTORS: (PROGRAMMING LANGUAGES, PROBLEM
SOLVING), (PROGRAMMING (COMPUTERS),
ACCURACY), SEMANTICS, SYNTAX, CODING,
ALGORITHMS, USSR (U)
IDENTIFIERS: ALGOL (U)

A SEMANTIC METHOD FOR CHECKING THE ACCURACY OF
ALGOL ALGEBRAIC PROBLEMS IS PROPOSED. THE
CONTENT AND ORGANIZATION OF THE SEMANTIC PROGRAM ARE
DISCUSSED AS WELL AS VARIOUS ADDITIONAL PROBLEMS
ASSOCIATED WITH FREEING THE INFORMATION FROM ERRORS.
THE PROPOSED METHOD VERIFIES THE PROGRAM WITH
RESPECT TO THE FOLLOWING POINTS: (1) THE RULES
ESTABLISHED FOR DESCRIPTION OF THE PROGRAMS SHOULD BE
OBSERVED; (2) THE QUANTITIES APPEARING IN THE
PROGRAM SHOULD BE USED IN POSITIONS CORRESPONDING TO
THEIR 'NATURE'; (3) THE ACTUAL PARAMETERS OF THE
PROCEDURE OPERATOR AND THE FORMAL PARAMETERS FOR
DESCRIPTION OF THIS PROCEDURE SHOULD CORRESPOND TO
ONE ANOTHER IN THE SENSE THAT THE PROCEDURE FIELD,
MODIFIED ACCORDING TO THE RULES FOR SYNTACTIC AND
SEMANTIC SENSE, I.E. THESE THREE POINTS SHOULD BE
FULFILLED IN THE OPERATOR. A GENERAL PROGRAM IS
DESCRIBED FOR CARRYING OUT THIS CHECKING METHOD.
THIS VERIFICATION SYSTEM IS SELF-CONTAINED WITH
RESPECT TO THE TRANSLATOR AND MAY BE USED ON MACHINES
WITH LESS COMPLEX CODING. SOME OF THE GENERAL
LIMITATIONS OF THE SYSTEM ARE POINTED OUT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-661 967 9/2 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SEMIANNUAL TECHNICAL SUMMARY REPORT TO THE DIRECTOR,
ADVANCED RESEARCH PROJECTS AGENCY FOR THE PERIOD 1
JANUARY 1967 TO 30 JUNE 1967. (U)
JUN 67 52P
REPT. NO. TM-687/008/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-651 582.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, REVIEWS),
(*DATA PROCESSING SYSTEMS, REVIEWS), INPUT-
OUTPUT DEVICES, TIME SHARING, MAN-MACHINE SYSTEMS,
LANGUAGE, LINGUISTICS, COMPILERS, NETWORKS (U)
IDENTIFIERS: LISP, ON-LINE SYSTEMS (U)

THE REPORT DESCRIBES WORK DONE IN THE ARPA
INFORMATION PROCESSING TECHNIQUES RESEARCH
AND LABORATORY PROGRAM AT SDC FROM 1 JANUARY
1967 TO 30 JUNE 1967. PROJECTS COVERED IN THIS
REPORT INCLUDE: PROGRAMMING LANGUAGE
DEVELOPMENT, MAN-MACHINE COMMUNICATION,
LANGUAGE PROCESSING RESEARCH, AND COMPUTER
PROGRAM MANAGEMENT. (AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-661 981 9/2 22/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SPECIFICATION OF SPL SPACE PROGRAMMING LANGUAGE, (U)
AUG 67 158P CAREY, LEVI J. IKROGER, AL
E. ISHAM, CHRISTOPHER J. I
REPT. NO. SDC-TH-3719/000/00
CONTRACT: F04695-67-C-0096
MONITOR: SAMSO TR-67-22

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN),
(*PROGRAMMING (COMPUTERS), *SPACECRAFT),
SYNTAX, DATA PROCESSING SYSTEMS, COMPUTERS,
TIME SHARING (U)
IDENTIFIERS: SPL (U)

THE DOCUMENT CONTAINS A COMPLETE SPECIFICATION OF
THE SPACE PROGRAMMING LANGUAGE (SPL) IN
BACHUS-NAUR FORM. A DESCRIPTION OF BASIC SPL
AND EXTENSIONS IS GIVEN. SPL IS A SPACE
APPLICATION LANGUAGE WITH A LARGE ARRAY OF
CAPABILITIES. IT IS FURTHER AN EXTENDABLE LANGUAGE
WITH PUNCTUATION RULES AND VOCABULARY DESIGNED FOR
EASE OF LEARNING AND PROGRAMMING. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000789

AD-662 081 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
LISP 2 FOR THE IBM S/260. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
APR 67 4P WILLS, R. ;
REF. NO. TM-3417/000/00
CONTRACT: F19628-67-C-0004

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
INFORMATION INTERNATIONAL, INC., LOS ANGELES.

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS), SEMANTICS, SYNTAX, DOCUMENTATION,
STANDARDS (U)
IDENTIFIERS: LISP, IBM 260 (U)

THE DOCUMENT ESTABLISHES A DOCUMENT SERIES (TM-
3417) FOR THE LISP 2 LANGUAGE AND PROCESSOR
DESIGNED FOR THE IBM S/260 COMPUTER. THIS SERIES
INCLUDES DOCUMENTS DESCRIBING THE SYNTAX AND
SEMANTICS OF THE LISP 2 LANGUAGE, SYSTEM AND
PROGRAM DESIGN SPECIFICATIONS, DOCUMENTATION
STANDARDS AND CONVENTIONS, AND USER INFORMATION.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-662 880 9/2 12/1
STANFORD UNIV CALIF DEPT OF COMPUTER SCIENCE
CORRECTNESS OF A COMPILER FOR ARITHMETIC
EXPRESSIONS.

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 66 15P MCCARTHY, JOHN ;
PAINTER, JAMES ;
REPT. NO. CS-38, AI MEMO-40
CONTRACT: SD-183

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: A PREPRINT OF A PAPER PRESENTED AT THE
SYMPOSIUM ON MATHEMATICAL ASPECTS OF COMPUTER
SCIENCE OF THE AMERICAN MATHEMATICAL SOCIETY HELD
APRIL 6-7 1966.

DESCRIPTORS: (COMPILERS, PROBLEM SOLVING),
(PROGRAMMING (COMPUTERS), MATHEMATICS),
ALGORITHMS, SYNTAX, SEMANTICS, THEOREMS

(U)

THE PAPER CONTAINS A PROOF OF THE CORRECTNESS OF A
SIMPLE COMPILING ALGORITHM FOR COMPILING ARITHMETIC
EXPRESSIONS INTO MACHINE LANGUAGE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-662 895 9/2
RCA LABS PRINCETON N J
FORMAL DEFINITION OF CDLI, A COMPUTER DESCRIPTION
LANGUAGE, (U)
OCT 67 106P SRINIVASAN, CHITTOOR V. I
REP1. NO. SCIENTIFIC-2
CONTRACT: AF 19(628)-4789
PROJ: AF-5632
TASK: 563202
MONITOR: AFRL 67-0588

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-661 591.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN),
SYNTAX, DOCUMENTATION, SEMANTICS (U)
IDENTIFIERS: CDLI (U)

THIS IS A COMPANION REPORT TO SCIENTIFIC REPORT
NO. 1, 'AN INTRODUCTION TO CDLI, A COMPUTER
DESCRIPTION LANGUAGE' (AD 661 591). THIS
GIVES A FORMAL DEFINITION OF CDLI. THE TWO
REPORTS TOGETHER PROVIDE A COMPLETE DOCUMENTATION FOR
THE LANGUAGE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000207

AD-663 502 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
A CANONIC TRANSLATOR. (U)
DESCRIPTIVE NOTE: THESIS,
NOV 67 86P ALSOP, JOSEPH WRIGHT I
REPT. NO. MAC-TR-46
CONTRACT: NONR-4102(01)
PROJ: NR-048-189, RR-002-C9-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
DECODING), FLOW CHARTING, SYNTAX, THESES,
ALGORITHMS, COMPUTER PROGRAMS, SET THEORY (U)
IDENTIFIERS: SNOBOL (U)

THE THESIS PRESENTS AN ALGORITHM TO RECOGNIZE AND
TRANSLATE SETS OF CHARACTER STRINGS SPECIFIED BY
CANONIC SYSTEMS. THE ABILITY OF CANONIC SYSTEMS TO
DEFINE THE CONTEXT SENSITIVE FEATURES OF STRINGS AND
TO SPECIFY THEIR TRANSLATION ALLOWS THE ALGORITHM TO
RECOGNIZE AND TRANSLATE REAL COMPUTER LANGUAGES.
IT IS ALSO APPLICABLE IN OTHER LANGUAGE SYSTEMS.
CANONIC SYSTEMS ARE DISCUSSED, AND SEVERAL EXAMPLES
OF THEIR USE ARE GIVEN. THE ALGORITHM IS
DESCRIBED, AND EXAMPLES OF CANONIC TRANSLATION ARE
PRESENTED USING A PROGRAM IMPLEMENTATION.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-A64 128 9/2 12/1
HARRY DIAMOND LABS WASHINGTON D C
PROBLEM SOLVING BY DIGITAL-ANALOG SIMULATION. (U)
DESCRIPTIVE NOTE: MASTER'S THESIS,
OCT 67 74P BLOOM, HOWARD M. I
REPT. NO. HDL-TR-1357
PROJ: HDL-39800

UNCLASSIFIED REPORT

DESCRIPTORS: (*ANALOG-DIGITAL COMPUTERS,
*PROGRAMMING LANGUAGES), (*PROBLEM SOLVING,
COMPUTER PROGRAMS), ANALOG COMPUTERS, DIGITAL
COMPUTERS, ALGEBRA, LINEAR PROGRAMMING,
SIMULATION, PARTIAL DIFFERENTIAL EQUATIONS,
BOUNDARY VALUE PROBLEMS, OPTIMIZATION, LEAST
SQUARES METHOD, POLYNOMIALS, THESES (U)
IDENTIFIERS: APACHE PROGRAMMING LANGUAGE, DSL/90
PROGRAMMING LANGUAGE, MIDAS PROGRAMMING LANGUAGE,
MIMIC PROGRAMMING LANGUAGE (U)

AN EVALUATION OF FOUR SIMULATION LANGUAGES,
MIDAS, APACHE, MIMIC, AND DSL/90, IS MADE TO
DETERMINE THEIR RELATIVE MERITS. THE APPLICATION
OF ANALOG COMPUTER TECHNIQUES TO DIGITAL-ANALOG
SIMULATION IS CONSIDERED. THE PROBLEMS DISCUSSED
ARE AS FOLLOWS: SOLUTION TO A SET OF LINEAR
ALGEBRAIC EQUATIONS, LINEAR PROGRAMMING, HYBRID
SIMULATION, PARTIAL DIFFERENTIAL EQUATIONS, BOUNDARY
VALUE PROBLEMS, PARAMETER OPTIMIZATION USING A LEAST
SQUARES ERROR CRITERION AND ROOTS OF POLYNOMIAL
EQUATIONS. A MATHEMATICAL OUTLINE OF THE TECHNIQUE
OR PROBLEM IS GIVEN AS WELL AS THE DIGITAL PROGRAM,
WRITTEN IN DSL/90, WHICH IS USED TO REPRESENT THE
PROBLEMS. POSSIBLE IMPROVEMENTS IN THE SIMULATION
LANGUAGE ARE SHOWN. SOME OF THE SUGGESTIONS
PRESENTED INCLUDE THE ABILITY TO DIMENSION VARIABLES,
AND A MEANS OF USING AN INTERACTION TECHNIQUE. (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-664 221 9/2
HARVARD UNIV CAMBRIDGE MASS DIV OF ENGINEERING AND
APPLIED PHYSICS
TWO CONVERSATIONAL LANGUAGES FOR CONTROL-THEORETICAL
COMPUTATIONS IN THE TIME-SHARING MODE. (U)
DESCRIPTIVE NOT.: TECHNICAL REPT.,
NOV 67 53P NEWBOLD, P. M. IAGRAWALA, A.
K. 8
REPT. NO. TR-546
CONTRACT: N00014-67-A-0298
PROJ: NR-372-012

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIME SHARING, COMPUTER
PROGRAMS), (*MATRIX ALGEBRA, PROBLEM SOLVING),
(*PROGRAMMING LANGUAGES, TIME SHARING),
INSTRUCTION MANUALS, PROGRAMMING (COMPUTERS),
LINEAR SYSTEMS, SIMULATION, FLOW CHARTING,
DIFFERENTIAL EQUATIONS (U)

THE PAPER PRESENTS IN THE FORM OF USERS' MANUALS, A
DESCRIPTION OF TWO CONVERSATIONAL LANGUAGES FOR USE
ON A DIRECT-ACCESS TIME-SHARING COMPUTER. THE
LANGUAGES ARE DESIGNED FOR CONTROL-THEORETIC
APPLICATIONS. THE FIRST LANGUAGE IS A MATRIX
MANIPULATION LANGUAGE. THE SECOND IS DESIGNED TO
SIMULATE LINEAR DYNAMIC SYSTEMS AND TO SOLVE THE
ASSOCIATED RICCATI EQUATIONS. FURTHER
APPLICATIONS ARE ALSO POSSIBLE. EACH MANUAL
INCLUDES DETAILED EXAMPLES OF THE USAGE OF THE
LANGUAGES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-664 440 9/2 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB
LANGUAGE STRUCTURE AND GRAPHICAL MAN-MACHINE
COMMUNICATION. (U)
DESCRIPTIVE NOTE: MEETING SPEECH.
66 4P SUTHERLAND, WILLIAM R. I
REPT. NO. MS-1765
CONTRACT: AF 19(628)-5167, ARPA ORDER-691
MONITOR: ESD TR-67-575

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN PROCEEDINGS CONGRESS
OF INFORMATION SYSTEM SCIENCE AND TECHNOLOGY
(2RD) 829-31 NOV 1966.

DESCRIPTORS: (*INFORMATION RETRIEVAL, PROGRAMMING
LANGUAGES), (*GRAPHICS, *PROGRAMMING
LANGUAGES), SYNTAX, MAN-MACHINE SYSTEMS,
COMPUTERS, SYSTEMS ENGINEERING, COMPILERS,
PATTERN RECOGNITION, PICTURES, FLOW CHARTING (U)
IDENTIFIERS: COMPUTER GRAPHICS, GRAPHICAL
LANGUAGES (U)

GRAPHICAL LANGUAGES INCLUDE PROGRAMMING LANGUAGES;
INTERACTIVE CONTROL LANGUAGES, AND PICTURE LANGUAGES.
UNDERSTANDING THE FORM OR SYNTAX OF EACH IS AN
IMPORTANT STEP IN CREATING AN INTERACTIVE COMPUTER
GRAPHICS SYSTEM. (AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-664 470 9/2
NAVAL WEAPONS LAB DAHLGREN VA
LIST-FORTRAN, A BASIC LIST-PROCESSING EXTENSION OF
FORTRAN ON THE IBM 360. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 67 54P HUBER, HARTMUT G. M. I
REPT. NO. NWL-TR-2122

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES, DATA
PROCESSING SYSTEMS), SUBROUTINES, DATA STORAGE
SYSTEMS, AUTOMATIC, DIGITAL COMPUTERS,
OPERATION, FUNCTIONS (U)
IDENTIFIERS: LISP PROGRAMMING LANGUAGE, IBM 360,
LIST-FORTRAN PROGRAMMING LANGUAGE (U)

FORTRAN IS QUITE CONVENIENT FOR WRITING PROGRAMS
THAT PROCESS DATA OF THE TYPE INTEGER, REAL, OR
LOGICAL, OR ARRAYS OF SUCH BASIC DATA TYPES, THE
LANGUAGE, HOWEVER, IS INADEQUATE FOR HANDLING DATA OF
UNPREDICTABLE LENGTH AND INHOMOGENEOUS NATURE,
NORMALLY REPRESENTED AS SEQUENCES OF EXPRESSIONS
BUILT UP FROM VARIOUS BASIC CONSTITUENTS. LIST-
FORTRAN IS AN EXTENSION OF FORTRAN SUCH THAT IN
ADDITION TO REAL, AND INTEGER DATA, A NEW DATA
TYPE LIST IS AVAILABLE AS AN OBJECT FOR
COMPUTATION. A CONVENIENT SET OF OPERATIONS IS
PROVIDED FOR MANIPULATING DATA THAT ARE LISTS.
THEY ARE USED IN THE SAME WAY AS ANY OTHER FORTRAN
SUBROUTINES OR FUNCTIONS. THE SYSTEM CONTAINS
BOTH A SET OF GENERAL LIST-PROCESSING OPERATIONS AND
AN EFFICIENT RATIONAL ARITHMETIC FOR ARBITRARY LONG
NUMBERS REPRESENTED AS LISTS. ADMINISTRATION OF
STORAGE IS BASED ON AUTOMATIC STORAGE ALLOCATION
USING A TECHNIQUE KNOWN AS GARBAGE COLLECTION. IT
IS IMPLEMENTED ON THE IBM 360 AND AVAILABLE WITHIN
THE FORTRAN SYSTEM UNDER BPS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-665 241 9/2 12/1
WISCONSIN UNIV MADISON MATHEMATICS RESEARCH CENTER
COMPILER OF DIFFERENTIABLE EXPRESSIONS (CODEX) FOR
THE CDC 3600. (U)
DESCRIPTIVE NOTE: TECHNICAL SUMMARY REPT.,
DEC 67 62P REITER, ALLEN; GRAY, JULIA
H. I
REPT. NO. MRC-TSR-791
CONTRACT: DA-31-124-ARO(D)-462

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, *DATA PROCESSING
SYSTEMS), SUBROUTINE, PROGRAMMING LANGUAGES,
PROGRAMMING (COMPUTERS), FLOW CHARTING,
TRANSCENDENTAL FUNCTIONS, PROBLEM SOLVING (U)
IDENTIFIERS: CODEX COMPILER, FORTRAN (U)

IN DESIGNING GENERAL PROGRAMS FOR THE SOLUTION OF
SYSTEMS OF NONLINEAR EQUATIONS, FOR NUMERICAL
INTEGRATION, AND FOR MANY OTHER MATHEMATICAL
PROCEDURES ONE IS CONFRONTED WITH THE NEED FOR A
GENERALIZED DIFFERENTIATION ROUTINE. CODEX IS A
PROGRAM FOR THE CDC 3600 DESIGNED TO MEET THIS
NEED. THE PROGRAM READS THE FUNCTIONS IN FROM
CARDS TRANSLATES THEM INTO CODE WHICH IS USED IN THE
DIFFERENTIATION AND EVALUATION OF THE FUNCTIONS.
LIKEWISE THE CODE RESULTING FROM DIFFERENTIATION OF
A FUNCTION MAY BE USED IN FURTHER DIFFERENTIATION AND
EVALUATION. (AUTHOR) (U)

UNCLASSIFIED

DGC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-666 370 9/2

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
SOME TECHNIQUES FOR DESCRIBING PROGRAMMING
LANGUAGES.

(U)

DESCRIPTIVE NOTE: PROFESSIONAL PAPER,

JAN 68 22P PERSTEIN, MILLARD H. I

REPT. NO. SP-2916/OC0/01

UNCLASSIFIED REPORT

DESCRIPTORS: (PROGRAMMING LANGUAGES,
SPECIFICATIONS), PROGRAMMING (COMPUTERS),
STANDARDS, SYNTAX, OPTIMIZATION

(U)

IDENTIFIERS: JOVIAL

(U)

THE PAPER EXAMINES SEVERAL TECHNIQUES FOR
DESCRIBING A PROGRAMMING LANGUAGE, POINTS OUT
DESIRABLE QUALITIES IN PROGRAMMING LANGUAGE
DESCRIPTION, AND NOTES SOME INCOMPATIBILITIES AMONG
THESE QUALITIES. MISCONCEPTIONS WITH REGARD TO THE
APPROPRIATE ROLE OF COMPACT SYNTAX METALANGUAGES ARE
POINTED OUT. REASONS ARE ADDUCED FOR PRODUCING A
SINGLE DEFINITIVE DOCUMENT TO SPECIFY A GIVEN
PROGRAMMING LANGUAGE FOR THE EDIFICATION OF ALL
PROGRAMMERS SKILLED IN THE ART. A LEAN MIX OF
COMPACT SYNTAX METALANGUAGE WITH NATURAL LANGUAGE IS
RECOMMENDED FOR WRITING SUCH A DOCUMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-666 407 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
ANNUAL REPORT ON ALGORITHMIC LANGUAGES PROJECT. (U)
DESCRIPTIVE NOTE: ANNUAL REPT. 1 OCT 66-30 SEP 67.
NOV 67 12P GINSBURG, SEYMOUR I
REPT. NO. SDC-TM-3763
CONTRACT: F19628-67-C-0008, AF-AFOSR-1203-67
PROJ: AF-5622
TASK: 56205

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES; DESIGN),
SYNTAX, MATHEMATICAL MODELS, CONTEXT FREE
GRAMMARS, DATA PROCESSING SYSTEMS, EFFICIENCY (U)
IDENTIFIERS: ALGOL PROGRAMMING LANGUAGE, COBOL,
JOVIAL, ALGORITHMIC LANGUAGES (U)

THE PURPOSE OF THIS REPORT IS TO REVIEW AND
SUMMARIZE THE RESULTS PRESENTED IN ELEVEN SCIENTIFIC
REPORTS DURING THE CONTRACT PERIOD. REPORTS THE
PURPOSE OF THE INVESTIGATION WAS TO ACCOMPLISH THE
FOLLOWING: (1) CONDUCT RESEARCH DESIGNED TO
DEVELOP A THEORY FOR ALGORITHMIC (PROGRAMMING
LANGUAGES). (2) DEVELOP SUITABLE
MATHEMATICAL MODELS OF CURRENTLY USED MATHEMATICAL
LANGUAGE SUCH AS ALGOL, COBOL, AND JOVIAL.
(3) USE THE MATHEMATICAL MODELS TO ANSWER
QUESTIONS OF INTEREST ABOUT THESE LANGUAGES.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-667 209 9/2 9/7
AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIZLO
MASS
THE UNSOLVABILITY OF THE EQUIVALENCE PROBLEM FOR
LAMBDA-FREE NONDETERMINISTIC GENERALIZED MACHINES. (U)
DESCRIPTIVE NOTE: PHYSICAL SCIENCES RESEARCH PAPERS, NO.
395,

JAN 68 14P GRIFFITHS, T. V. I
REPL. NO. AFRL-68-0012
PROJ: AF-5632
TASK: 563205

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
THEOREMS), ALGORITHMS, SET THEORY,
MAPPING (TRANSFORMATIONS), DETERMINATION,
ARTIFICIAL INTELLIGENCE, LINGUISTICS, LEARNING
MACHINES, GROUPS (MATHEMATICS) (U)
IDENTIFIERS: *SEQUENTIAL MACHINES (U)

WE SHOW THAT THE EQUIVALENCE PROBLEM FOR LAMBDA-
FREE NONDETERMINISTIC GENERALIZED MACHINES IS
UNSOLVABLE AND OBSERVE THAT THIS RESULT IMPLIES THE
UNSOLVABILITY OF THE EQUALITY PROBLEM FOR C-FINITE
LANGUAGES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-667 932 9/2
NATIONAL RESOURCE ANALYSIS CENTER WASHINGTON D C
EXEC 8 INPUT-OUTPUT INTERFACE FOR FORTRAN V. (U)
JAN 68 37P
REPT. NO. NRAC-TECHNICAL MANUAL-206

UNCLASSIFIED REPORT

DESCRIPTORS: (•DATA PROCESSING SYSTEMS,
•PROGRAMMING LANGUAGES), (•INPUT-OUTPUT DEVICES,
MAGNETIC RECORDING SYSTEMS), SUBROUTINES,
MAGNETIC TAPE, SPECIFICATIONS, ERRORS,
SEQUENCES, DIGITAL COMPUTERS,
PROGRAMMING (COMPUTERS) (U)
IDENTIFIERS: FORTRAN (U)

THIS REPORT IS A DESCRIPTION OF THE PRELIMINARY
SPECIFICATIONS INCLUDING CALLING SEQUENCES FOR AN
INPUT-OUTPUT ITEM HANDLING SYSTEM TO INTERFACE
BETWEEN FORTRAN PROGRAMS AND THE 1108 EXEC 8 DATA
HANDLING ROUTINES. IT IS INTENDED THAT THIS
INTERFACE PROVIDE TO A FORTRAN PROGRAM ALL THE ITEM
HANDLING CAPABILITIES THAT ARE AVAILABLE TO AN
ASSEMBLY PROGRAM UNDER EXEC 8 CONTROL, WITH SOME
ADDITIONAL PROGRAMMING CONVENIENCES INCORPORATED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-668 464 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA
FORMULA ALGOL MANUAL,
JUN 67 121P EARLEY, JAY I
CONTRACT: SD-146
PROJ: AF-9718
MONITOR: AFOSR 68-0856

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION
MANUALS), COMPILERS, ALGORITHMS, SYNTAX,
SEMANTICS, ALGEBRAS, FUNCTIONS, SEQUENCES,
ERRORS

(U)

IDENTIFIERS: ALGOL

(U)

FORMULA ALGOL IS AN EXTENSION OF ALGOL 60
INCORPORATING FORMULA MANIPULATION AND LIST
PROCESSING. THIS MANUAL DESCRIBES THE USE OF THE
VERSION OF FORMULA ALGOL WHICH IS PRESENTLY
RUNNING AT CARNEGIE-MELLON UNIVERSITY.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-668 960 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
DESIGN AND IMPLEMENTATION OF A TABLE-DRIVEN COMPILER
SYSTEM. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT. SEP 65-APR 67,
JUL 67 87P LIU, CHUNG L. I
CHANG, GABRIEL D. I MARKS, RICHARD E. I
REPT. NO. MAC-TR-42
CONTRACT: NONR-4102(01)
PROJ: NR-048-189, RR-002-09-01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJ. MAC.

DESCRIPTORS: (*COMPILERS, DESIGN), REAL TIME,
SYNTAX, TIME SHARING, PROBLEM SOLVING,
PROGRAMMING LANGUAGES, FLOW CHARTING,
EFFICIENCY (U)
IDENTIFIERS: MAC PROJECT, ON-LINE SYSTEMS,
SYNTAX-DIRECTED COMPILERS, TABLE-DRIVEN
COMPILERS (U)

THE GOAL IS TO PROVIDE USERS OF THE TABLE-DRIVEN
COMPILER SYSTEM WITH AN ENVIRONMENT WITHIN WHICH THEY
CAN FREELY DESIGN AND PRODUCE COMPILERS. THE
PRIMARY DESIGN CRITERION IS GENERALITY SO THAT THE
USERS CAN DEFINE A LARGE CLASS OF INPUT LANGUAGES
ORIENTED TOWARD ANY KIND OF PROBLEM-SOLVING PURPOSES,
AND CAN ALSO DEFINE A LARGE CLASS OF OBJECT PROGRAMS
TO BE EXECUTED ON DIFFERENT COMPUTER SYSTEMS.
THEREFORE, THE SYSTEM IS NOT LIMITED TO SPECIFIC
WAYS OF DOING SYNTACTIC ANALYSIS, OR DOING STORAGE
ALLOCATION, OR PRODUCING BINARY PROGRAMS OF A
SPECIFIC FORMAT FOR A PARTICULAR COMPUTER SYSTEM.
WHAT IS PROVIDED ARE MECHANISMS THAT ARE GENERAL
ENOUGH FOR WHICHEVER WAY A USER DESIRES TO BUILD HIS
COMPILER. THE TABLE-DRIVEN COMPILER SYSTEM
CONSISTS OF A BASE PROGRAM AND TWO FIXED HIGHER-LEVEL
LANGUAGES--THE TABLE DECLARATION AND
MANIPULATION LANGUAGE AND THE MACRO
INTERPRETATION LANGUAGE--TOGETHER WITH
CORRESPONDING TRANSLATORS TO GENERATE CONTROL TABLES
ACCORDING TO USER SPECIFICATIONS. A THIRD HIGHER-
LEVEL LANGUAGE--THE SYNTAX DEFINING LANGUAGE--
AND ITS CORRESPONDING TRANSLATOR ARE ALSO NEEDED.
FOR THE GENERALITY AND FLEXIBILITY ONE TRIES TO
ATTAIN, LESS CONSIDERATION IS PLACED ON EFFICIENCY.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-469 048 9/2 3/7
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF
ELECTRICAL ENGINEERING
EXPLICIT DEFINITIONS AND LINGUISTIC DOMINOES, (U)
67 44P GORN, SAUL I
CONTRACT: DA-31-124-AROD-98, NSF-GP-1476
PROJ: DA-200145018140
MONITOR: AROD 414618

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN SYSTEMS AND COMPUTER
SCIENCE, P77-115 1967.
SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY PUBLIC
HEALTH SERVICE.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN),
(*LINGUISTICS, MATHEMATICAL MODELS), SET
THEORY, SYMBOLS, FLOW CHARTING, MATHEMATICAL
LOGIC, MAPPING (TRANSFORMATIONS), THEOREMS (U)
IDENTIFIERS: PREFIX LANGUAGES, EXPLICIT
DEFINITION, FORM LANGUAGES (U)

THE PAPER DISCUSSES THE EFFECT PRODUCED IN
'COMPLETE PREFIX LANGUAGES' UNDERGOING EXTENSION AT
THE INTRODUCTION OF NEW CHARACTERS INTO THEIR
ALPHABET BY A PROCESS OF 'EXPLICIT DEFINITION.'
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-669 438 9/2 19/7
GULTON SYSTEMS RESEARCH GROUP INC ARLINGTON VA
HANDBOOK FOR MILITRAN ANALYSTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

APR 68 195P GIAMMO, THOMAS ;

CONTRACT: NONR-2936(00)

PROJ: NR-276-001, RR-003-11-D1

UNCLASSIFIED REPORT

DESCRIPTORS: (•OPERATIONS RESEARCH, •PROGRAMMING
LANGUAGES), SIMULATION, MATHEMATICAL MODELS,
HANDBOOKS, COMPILERS, COMPATIBILITY,
PROGRAMMING (COMPUTERS), INPUT-OUTPUT DEVICES,
WAR GAMES, BIBLIOGRAPHIES

(U)

IDENTIFIERS: MILITRAN PROGRAMMING LANGUAGE

(U)

THIS DOCUMENT IS A GUIDE FOR THOSE INVOLVED IN
MILITARY OPERATIONS RESEARCH AND EMPHASIZES THE
METHODS AND OBJECTIVES OF MILITRAN, AN ENGLISH-
LIKE COMPILER LANGUAGE USED AS A TOOL IN THE DESIGN
OF SIMULATION MODELS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000289

AD-669 443 9/2
NAVAL ELECTRONICS LAB CENTER FOR COMMAND CONTROL AND
COMMUNICATIONS SAN DIEGO CALIF
PROGRAMMING LANGUAGES FOR DIGITAL WEAPON SYSTEMS:
EVALUATION. (U)
DESCRIPTIVE NOTE: EVALUATION REPT. NOV 66-APR 67,
DEC 67 82P TIERNAN, J. C. I
REPT. NO. NELC-1927
PROJ: S31-05
TASK: 11248 (NELC N417)

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, WEAPON
SYSTEMS), MAN-MACHINE SYSTEMS, DIGITAL
COMPUTERS, SPECIAL PURPOSE COMPUTERS, COMMAND +
CONTROL SYSTEMS, COMPILERS, SYNTAX, LEARNING,
DIGITAL SYSTEMS (U)
IDENTIFIERS: ALGOL PROGRAMMING LANGUAGE, CS-1
PROGRAMMING LANGUAGE, SYCOL PROGRAMMING LANGUAGE,
NOLIAE PROGRAMMING LANGUAGE, COBOL, JOVIAL,
FORTRAN (U)

THE REPORT CONSIDERS PROGRAMMING LANGUAGES FROM THE
VIEWPOINT OF DIGITAL WEAPON SYSTEMS REQUIREMENTS.
MACHINE-ORIENTED AND PROCEDURE-ORIENTED LANGUAGES
ARE QUALITATIVELY COMPARED. ALSO, A QUALITATIVE
EVALUATION IS MADE OF THE VARIOUS PROCEDURE-ORIENTED
LANGUAGES AVAILABLE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-804 036 9/2

CARNEGIE INST OF TECH PITTSBURGH PA
A COMPUTER PROGRAM FOR DISCOVERING AND PROVING
SEQUENTIAL RECOGNITION RULES FOR WELL-FORMED FORMULAS
DEFINED BY A BACKUS NORMAL FORM GRAMMAR. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
MAY 64 93P LONDON, RALPH L. J

CONTRACT: SD-146

MONITOR: AFOSR 67-0259

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DOCTORAL THESIS.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *COMPUTER
PROGRAMS), ARTIFICIAL INTELLIGENCE, LANGUAGE,
THESES, SYNTAX, CHARACTER RECOGNITION,
GRAMMARS, MATHEMATICAL LOGIC, THEOREMS,
MACHINE TRANSLATION (U)
IDENTIFIERS: ARTIFICIAL LANGUAGES, BNF (BACKUS
NORMAL FORM) (U)

A REPORT IS PRESENTED BASED UPON A COMPUTER PROGRAM
WHICH WILL DISCOVER RULES FOR THE RECOGNITION OF
GRAMMATICAL STRINGS WHEN GIVEN A SIMPLE BACKUS
NORMAL FORM GRAMMAR. THE PROGRAM ATTEMPTS TO
PROVE THAT THESE RULES ARE BOTH NECESSARY AND
SUFFICIENT TO CHARACTERIZE GRAMMATICAL STRINGS.
THE MAIN MATHEMATICAL TECHNIQUES THAT ARE
MECHANIZED ARE INDUCTION AND CASE ANALYSIS. IN
ADDITION THE PROGRAM IS CAPABLE OF PRODUCING COUNTER-
EXAMPLES. SINCE THE PROGRAM IS WRITING PROOFS,
SEVERAL (META-)PROOFS ARE INCLUDED ASSERTING THE
CORRECTNESS OF THE PRODUCED PROOFS. THE PROGRAM
EXISTS FOR TWO REASONS. FIRST, IT WILL CONSTRUCT A
RECOGNIZER FOR SOME BACKUS NORMAL FORM GRAMMARS
AND PROVIDE A PROOF OF THE VALIDITY OF THE
RECOGNIZER. SECOND, ITS DOMAIN IS A CONVENIENT ONE
FOR PROVING THEOREMS BY MACHINES, ESPECIALLY THOSE
WHOSE PROOFS MAY USE FAIRLY INVOLVED CASE ANALYSIS.
THE OVERALL STRATEGY USED TO DISCOVER THE RULES AND
TO PROVE THEM VALID IS DESCRIBED, FOLLOWED BY A
DISCUSSION OF THE PROGRAM ORGANIZATION AND INTERNAL
REPRESENTATIONS. LIMITATIONS AND POSSIBLE
IMPROVEMENTS TO THE PRESENT PROGRAM ARE MENTIONED.
AN ASSESSMENT IS MADE OF THE MATHEMATICAL
ACCOMPLISHMENTS OF THE PROGRAM AND THE VALUE OF THE
PROGRAM AS A MATHEMATICAL AID. AN APPENDIX
PRESENTS THE OUTPUT OF FOUR EXAMPLES OF PROGRAM RUNS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000389

AD-809 415 9/2 12/1
CARNEGIE INST OF TECH PITTSBURGH PA
SEQUENTIAL EQUIVALENTS OF PARALLEL PROCESSES, (U)
FEB 67 28P PARNAS, D. L. I
CONTRACT: SD-146
MONITOR: AFOSR 67-0755

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES,
*PROGRAMMING (COMPUTERS)), ALGORITHMS, DATA
PROCESSING SYSTEMS, NETWORKS, INPUT-OUTPUT
DEVICES, PROBLEM SOLVING, SEQUENCES, INFORMATION
RETRIEVAL (U)

THIS PAPER INTRODUCES THE PROBLEM OF FINDING A
SEQUENTIAL PROCESS EQUIVALENT TO A SYSTEM OF
INTERACTING DISCRETE PARALLEL PROCESSES. UNDER
THE ASSUMPTION THAT THE SEQUENTIAL PROCESS IS TO BE
COMPOSED EXCLUSIVELY OF EXECUTIONS OF THE INDIVIDUAL
'PARALLEL' PROCESSES IN A PREDETERMINED SEQUENCE, A
METHOD OF DERIVING OPTIMAL SEQUENTIAL PROCESSES IS
PRESENTED. APPLICATIONS TO THE DESIGN OF
SIMULATION SYSTEMS AND PICTURE PROCESSING PROGRAMS
ARE DISCUSSED. EXAMPLES ARE TAKEN FROM LOGIC
DESIGN AND PICTURE PROCESSING. (AUTHOR) (U)

COMPUTER PROCESSING OF ANALOG DATA

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-270 238

STANFORD UNIV CALIF APPLIED MATHEMATICS AND STATISTICS
LABS

VECTOCARDIOGRAPHIC DIAGNOSIS WITH THE AID OF
ALGOL

(U)

OCT 61

IV

FORSYTHE, G.E. IVON DER GROEBEN, J.I

TOOLE, J.G.I

REPT. NO. TR16

CONTRACT: NONR22637

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROCARDIOGRAPHY, *HEART, *MUSCLES,
COMPUTERS, STATISTICAL ANALYSIS

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-289 830

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
COMPUTER APPLICATIONS IN MEDICINE AND THE BIOLOGICAL
SCIENCES BIBLIOGRAPHY (U)

NOV 62 IV EMPEY, SALLY L. I
REPT. NO. SP 1028

UNCLASSIFIED REPORT

DESCRIPTORS: *BIBLIOGRAPHIES, *COMPUTERS, *MEDICINE,
BIOLOGY, CYBERNETICS, DATA PROCESSING SYSTEMS,
DIAGNOSIS, INFORMATION RETRIEVAL, MEDICAL
EXAMINATION (U)

A LIST IS PRESENTED OF PUBLISHED DOCUMENTS
CONTAINING MATERIAL RELATED TO COMPUTER APPLICATIONS
IN MEDICINE AND THE BIOLOGICAL SCIENCES. SOME OF
THE AREAS COVERED ARE: BIO-MEDICAL SYSTEMS,
SIMULATION, COMPUTER-AIDED DIAGNOSIS, INFORMATION
RETRIEVAL AND DATA ANALYSIS IN BIO-MEDICINE, AND
COMPUTER-AIDED MEDICAL AND BIOLOGICAL RESEARCH.
THE EMPHASIS HAS BEEN PLACED PRIMARILY ON RECENTLY
PUBLISHED MATERIAL BECAUSE THE FIELD, ALTHOUGH
RELATIVELY NEW, IS CHANGING SO RAPIDLY THAT THE
INFORMATION BECOMES QUICKLY OUTDATED. AN EARLIER
BIBLIOGRAPHY COVERS THE PERIOD FROM 1950 TO OCTOBER
1960. THIS DOCUMENT, PN- 1839/000/01-13,
SEPTEMBER 1961, MAY BE OBTAINED BY WRITING TO
DOCUMENT DISTRIBUTION, SYSTEM DEVELOPMENT
CORPORATION, 2500 COLORADO, SANTA MONICA,
CALIFORNIA. MOST OF THE REFERENCE ITEMS INCLUDED
IN THE PRESENT BIBLIOGRAPHY ARE MORE RECENT THAN
OCTOBER 1960. A FEW OLDER ITEMS, NOT FOUND IN
THE EARLIER BIBLIOGRAPHY, ARE, HOWEVER, INCLUDED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-294 172

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
THE AUTOMATION OF PSYCHOTHERAPY

(U)

DEC 62 IV HEANY, J. I

REPT. NO. SP 1050

UNCLASSIFIED REPORT

DESCRIPTORS: •NEUROLOGY, •PSYCHIATRY, AUTOMATION,
COMPUTERS, PROGRAMMING (COMPUTERS), THEORY

(U)

A STUDY OF THE IMPLICATIONS OF AUTOMATION FOR PSYCHOTHERAPY IS PRESENTED. THE GROWTH IN THE USE OF COMPUTERS, THEIR POWER AND CAPACITY, AS WELL AS SOME OF THEIR APPLICATIONS IN THE BEHAVIORAL SCIENCES, ARE INDICATED. A STUDY OF THE VARIOUS TECHNIQUES OF COMPUTER PROGRAMMING WHICH WOULD AFFECT THE MAN-MACHINE RELATIONSHIP IN AN AUTOMATED TYPE OF PSYCHOTHERAPY IS PRESENTED. THESE PROGRAMMING TECHNIQUES INCLUDE FIXED SEQUENCE PROGRAMS, ALTERNATIVE SEQUENCE PROGRAMS, AND VARIED SEQUENCE COMPUTER PROGRAMS. SOME OF THE RELATIONSHIPS BETWEEN COMPUTER PROGRAMMING TECHNIQUES AND DIFFERENT THEORETICAL POSITIONS IN PSYCHOLOGY ARE INDICATED. FOR EXAMPLE, THE SKINNER APPROACH SEEMS TO STRESS A FIXED SEQUENCE APPROACH TO PROGRAMMING WHILE A CLIENT-CENTERED THERAPY APPROACH WOULD SEEM TO NECESSITATE A VARIED SEQUENCE APPROACH WITH THE COMPUTER BEING PROGRAMMED TO BE RESPONSIVE TO THE NEEDS OF THE CLIENT. SOME OF THE EFFECTS OF USING INFORMATION RETRIEVAL EQUIPMENTS ON AUTOMATED PSYCHOTHERAPY ARE INDICATED. A BRIEF REVIEW OF THE RESEARCH ON STUDENT-ORIENTED TEACHING MACHINES ALONG WITH THE IMPLICATIONS OF THIS RESEARCH FOR PSYCHOTHERAPY MACHINES ARE PRESENTED. HOW A COMPUTER COULD BE ACTUALLY APPLIED TO PSYCHOTHERAPY IS DISCUSSED ALONG WITH THE PSYCHOLOGICAL THEORY UPON WHICH THIS APPLICATION IS BASED. SOME OF THE PROBLEMS, VALUES, AND SOCIAL CONSEQUENCES INVOLVED IN THE AUTOMATION OF PSYCHOTHERAPY ARE PRESENTED.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-411 451

AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB
OHIO

AN IMPEDANCE RESPIROMETER.

(U)

DESCRIPTIVE NOTE: FINAL REPT., AUG 61-AUG 62.

JUN 63 8P MCCALLY, MICHAEL I

BARNARD, GEORGE W. ROBINS, KENNETH E. I

MARKO, ADOLF R. I

PROJ: 7222

TASK: 722203

MONITOR: TOR 63 45

UNCLASSIFIED REPORT

UNCLASSIFIED REPORT

DESCRIPTORS: (RESPIRATION, METER), MEASURE
MENT, VOLUME, ELECTRICAL IMPEDANCE, TRANSISTORS,
TELEMETER SYSTEMS, MAN, ANALOG COMPUTERS,
COMPUTERS, SPACE FLIGHT, SPACE MEDICINE,
PHYSIOLOGY, RELIABILITY, ELECTRODES,
INSTRUMENTATION.

(U)

IDENTIFIERS: 1963, RESPIROMETER.

(U)

WHEN A LOW-INTENSITY, HF (20-60 KC) CARRIER
SIGNAL IS APPLIED TO A HUMAN SUBJECT BETWEEN
BIAXILLARY ELECTRODES, A CHANGE IN IMPEDANCE CAN BE
MEASURED BETWEEN THE ELECTRODES. THIS CHANGE IN
IMPEDANCE CLOSELY PARALLELS THE SIMULTANEOUS CHANGES
IN THE VOLUME OF RESPIRED AIR. THE DESIGN AND
CIRCUITRY OF AN IMPEDANCE RESPIROMETER ARE PRESENTED.
SIMULTANEOUS TRACINGS FROM THIS RESPIROMETER AND A
WEDGE SPIROMETER WERE RECORDED FROM TEN SUBJECTS
DURING QUIET SITTING, STANDING, WALKING, AND RUNNING
IN PLACE THROUGH THE PHYSIOLOGICAL RANGE OF
RESPIRATORY RATE (8-40 BREATHS/MIN) AND VOLUME
(1/2-4 LITERS). THE OUTPUT OF THE IMPEDANCE
RESPIROMETER CORRELATED WELL WITH THE OUTPUT OF THE
WEDGE SPIROMETER IN THE QUIET, SEATED SUBJECT. THE
PROBLEMS OF ELECTRODE CONFIGURATION, BODY TYPE, AND
ELECTRODE ARTIFACT ARE DISCUSSED. THIS SYSTEM IS A
RELIABLE AND UNENCUMBERING METHOD OF MONITOR-
RESPIRATORY RATE AND, POTENTIALLY, RESPIRATORY
VOLUME. HOWEVER, ITS USE IS SEVERELY LIMITED BY
BASE LINE SHIFTS AND MOTION ARTIFACT DUE TO CHANGES
IN ELECTRODE IMPEDANCE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-420 518

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
AUTOMATIC DETECTION OF PSYCHOLOGICAL DIMENSIONS IN
PSYCHOTHERAPY TRANS CRIPTS BY MEANS OF CONTENT
WORDS,

(U)

14P

FORD, JOHN D. ,JR. I

REPT. NO. SP1220

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PSYCHIATRY, DATA PROCESSING
SYSTEMS), (*DATA PROCESSING SYSTEMS, PSYCHIATRY),
PROGRAMMING (LANGUAGES), VERBAL BEHAVIOR, DETECTION,
PSYCHOLOGY
IDENTIFIERS: SELF-EVALUATION, 1963

(U)

(U)

DESCRIBES AND EVALUATES TECHNIQUES FOR THE
AUTOMATIC DETECTION OF STATEMENTS OF SELF-EVALUATION
DURING PSYCHOTHERAPY SESSIONS. REPORTS THAT DATA
CONSISTED OF A NINE-SESSION CASE, THAT A VERBATIM
RECORD WAS PERFORMED USING COMPUTER PROGRAMS, AND
THAT 83% OF THE 268 SENTENCES DETECTED WERE JUDGED
RELEVANT TO SELF-EVALUATION. CLASSIFIES THE REASONS
FOR SPURIOUS DETECTIONS AND FAILURES OF DETECTION,
AND SUGGESTS METHOD OF ALLEVIATING THEM. REPORTS
THAT THIS STUDY DEMONSTRATES THE POTENTIAL VALUE OF
GROUPS OF CONTENT WORDS FOR THE DETECTION OF
PSYCHOLOGICAL DIMENSIONS FROM TRANSCRIPTS OF
INTERVIEW OR GROUP MEETINGS. STATES THAT WORK IS
UNDERWAY FOR THE FORMULATION OF DETECTION FORMATS FOR
OTHER PSYCHOLOGICAL DIMENSIONS OF TRANSCRIPTS.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-421 106

WASHINGTON UNIV SEATTLE

A RAPID METHOD AND SIMPLE COMPUTER FOR CALCULATING

CARDIAC OUTPUT BY DYE SOLUTION,

(U)

43 7P GRAESCH, PATRICK J. I

THEODORE NI

CONTRACT: DA49 193MD2201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (CARDIOGRAPHY, MATHEMATICAL ANALYSIS),
(MATHEMATICAL ANALYSIS, CARDIOGRAPHY), (BLOOD
CIRCULATION, DETERMINATION), ANALOG COMPUTERS, MEDICAL
RESEARCH, ARMY RESEARCH, LABORATORY EQUIPMENT,
EFFECTIVENESS, TEST METHODS, DYES, HEART, COMPUTERS,

INTEGRATORS

(U)

IDENTIFIERS: 1963, DYE DILUTION CURVES

(U)

A METHOD IS DESCRIBED IN WHICH CARDIAC-OUTPUT CAN
BE RAPIDLY AND ACCURATELY CALCULATED. THE METHOD IS
ONE OF FINDING THE AREA UNDER THE DILUTION CURVE.
RECIRCULATION ARTIFACT IS ELIMINATED BY SAMPLING
THE SLOPE AND THE INSTANTANEOUS VALUE OF THE CURVE
BEFORE RECIRCULATION. THE RATIO OF THE
INSTANTANEOUS VALUE (E) TO THE EXPONENTIAL
DOWNSLOPE YIELDS THE TIME CONSTANT. THE PRODUCT OF
E AND THE TIME CONSTANT IS THE AREA UNDER THE
EXPONENTIAL. THESE CHARACTERISTICS OF EXPONENTIAL
CURVES ARE PROVEN RIGOROUSLY. THE AREA UNDER A
RECORDED DILUTION CURVE MAY BE COMPUTED QUICKLY BY
DRAWING A TANGENT TO THE CURVE AND CONSTRUCTING A
RECTANGLE WHOSE SIDES ARE E AND THE TIME CONSTANT.
USING THE SUM OF THE ORDINATES ALONG THE PATH OF
THE CURVE AND THENCE ALONG THE TOP OF THE RECTANGLE
YIELDS THE AREA. THE FUNCTIONAL BLOCK DIAGRAM OF A
COMPUTER IS PRESENTED. THE COMPUTER PERFORMS THE
ELECTRONIC ANALOG OF THE GRAPHICAL OPERATIONS
DESCRIBED ABOVE. IT WAS CONSTRUCTED USING THREE
OPERATIONAL AMPLIFIERS AND FOUR MERCURY RELAYS, COSTS
LESS THAN \$300, AND OPERATES ON 12 VOLTS.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-421 107

WASHINGTON UNIV SEATTLE

THE USE OF AN ELECTRONIC INTEGRATOR AS A COMPUTER FOR
DYE DILUTION CURVES, (U)

63 IV GRAESCH, PATRICK J. IFINLEY
THEODORE N. INARD, RICHARD J. IBON'EA I, JOHN
J. I

CONTRACT: DA-49-193-MD-2231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (INTEGRATORS, PHYSIOLOGY),
(CARDIOGRAPHY, INTEGRATORS), (BLOOD CIRCULATION,
DETERMINATION), DYES, HEART, CARDIOVASCULAR SYSTEM,
ELECTRONIC EQUIPMENT, COMPUTERS, MEDICAL RESEARCH,
ARMY, ANALOG COMPUTERS (U)

IDENTIFIERS: 1963, DYE DILUTION CURVES (U)

A METHOD IS DESCRIBED IN WHICH THE DYE-DILUTION
CURVE (INCLUDING RECIRCULATION) IS INTEGRATED
ELECTRONICALLY. THE INTEGRAL IS RECORDED SEPARATELY
AND SIMULTANEOUSLY WITH THE DYE-DILUTION CURVE. AS
THE PRIMARY DILUTION CURVE EXPONENTIALLY APPROACHES
ZERO, ITS INTEGRAL EXPONENTIALLY APPROACHES A FINAL
VALUE. THIS FINAL VALUE OF THE INTEGRAL IS THE AREA
UNDER THE DILUTION CURVE. WITH RECIRCULATION, THE
INTEGRAL EXCEEDS THIS TRUE FINAL VALUE. BY SAMPLING
THE DILUTION CURVE BEFORE RECIRCULATION, INFORMATION
IS OBTAINED WHICH CAN BE USED TO GRAPHICALLY
DETERMINE THE FINAL VALUE OF THE INTEGRAL CURVE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-425 733

NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
BALLISTOCARDIOGRAPHIC ANALYSIS UTILIZING A
MATHEMATICAL MODEL AND PHOTOELECTRIC ANALOG.

(U)

24P MORSE, ROBERT L. I

MONITOR: NAVMED

NR005 13 7004 10

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (BALLISTOCARDIOGRAPHY, MATHEMATICAL
MODELS), CARDIOVASCULAR SYSTEM, ANALOG SYSTEMS,
THEORY, BLOOD PRESSURE, BLOOD CIRCULATION,
ANALYSIS, PHYSIOLOGY, ANALOG COMPUTERS

(U)

IDENTIFIERS: 1963, PHOTOELECTRIC ANALOG

(U)

BALLISTOCARDIOGRAPHIC ANALYSIS UTILIZING A MATHEMATICAL
MODEL AND PHOTOELECTRIC ANALOG.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-431 207

MAYO CLINIC ROCHESTER MINN

USE OF THE HUMAN CENTRIFUGE TO STUDY CIRCULATORY,
RESPIRATORY AND NEUROLOGIC PHYSIOLOGY IN NORMAL HUMAN
BEINGS AND A DESCRIPTION OF AN ELECTRONIC DATA
PROCESSING SYSTEM DESIGNED TO FACILITATE THESE
STUDIES. (U)

DESCRIPTIVE NOTE: REPT. FOR 23 AUG 60-1 NOV 61.

DEC 63 26P WOOD, EARL H. I

SUTTERER, WILLIAM F. MARSHALL, HIRSH W. I

NOLAN, A. CLARK I

CONTRACT: AF33 616 7594

PROJ: 7222

MONITOR: AMRL

TDR63 105

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON BIOPHYSICS OF FLIGHT.

DESCRIPTORS: (*STRESS (PHYSIOLOGY), ACCELERATION),
PHYSIOLOGY, DATA PROCESSING SYSTEM, CARDIOVASCULAR
SYSTEM, BLOOD CIRCULATION, CENTRIFUGAL FIELDS,
NEUROLOGY, RESPIRATORY SYSTEM, RESPIRATION, TOLERANCES
(PHYSIOLOGY), BRAIN (U)

IDENTIFIERS: 1963, HUMAN CENTRIFUGE, PULMONARY
CIRCULATION (U)

STUDY OF THE REACTIONS OF A SYSTEM TO TRANSIENT
REPRODUCIBLE DEGREES OF STRESS IS A USEFUL MEANS OF
ELUCIDATING THE MECHANISMS OF ACTION OF THE SYSTEM.
EXPOSURES TO POSITIVE ACCELERATIONS CAN BE USED TO
PRODUCE SUDDEN DECREASES IN ARTERIAL PRESSURE AT HEAD
LEVEL OF ANY DESIRED DEGREE DOWN TO ZERO. STUDY OF
THE REACTIONS OF THE CARDIOVASCULAR SYSTEM INDUCED IN
THIS MANNER TO ELUCIDATE CIRCULATORY PHYSIOLOGY HAS
SEEN ONLY PARTIALLY EXPLOITED. THESE SAME
MANEUVERS CAN BE USED TO PRODUCE TEMPORARY
REPRODUCIBLE DEGREES OF STAGNANT ANOXIA OF THE RETINA
AND BRAIN OF CONSCIOUS NORMAL HUMAN BEINGS AND HENCE
OFFER A POTENTIALLY FRUITFUL FIELD FOR STUDY OF THE
INTERRELATIONSHIPS OF THE LEVEL OF CONSCIOUSNESS,
ELECTRICAL ACTIVITY OF THE BRAIN AND RETINA, ARTERIAL
PRESSURE AT HEAD LEVEL AND BLOOD FLOW TO THESE AREAS.
THE HYDROSTATIC EFFECTS OF ACCELERATION CAUSE
PROFOUND ALTERATIONS IN THE VENTILATION-PERFUSION
RATIOS IN THE LUNGS WHICH ARE IN OPPOSITE DIRECTIONS
IN THE DEPENDENT AND SUPERIOR PORTIONS OF THE THORAX.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-435 982

AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO
1963 BIONICS SYMPOSIUM 19-20-21 MARCH, INFORMATION
PROCESSING BY LIVING ORGANISMS AND MACHINES. (U)

MAR 64 340P

REPT. NO. ASD-TDR-63-946

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BIONICS, SYMPOSIA), (*SYMPOSIA,
BIONICS), (*ARTIFICIAL INTELLIGENCE, MEDICAL
RESEARCH), NETWORK, MODELS (SIMULATIONS), NERVE CELLS,
NERVOUS SYSTEM, MATHEMATICAL MODELS, COLOR VISION,
AUDITORY PERCEPTION, LEARNING, DATA PROCESSING
SYSTEMS, BEHAVIOR, TRAINING DEVICES, CYBERNETICS,
COMPUTERS, COMMUNICATION THEORY, MATHEMATICAL LOGIC (U)
IDENTIFIERS: 1963 (U)

THIS REPORT COMPILES PAPERS PRESENTED IN THE
INVITED SESSIONS AT THE BIONICS SYMPOSIUM 1963
HELD 19-21 MARCH 1963 AT DAYTON, OHIO. THESE
SESSIONS ARE DEVOTED TO THE SUBJECT INFORMATION
PROCESSING BY LIVING ORGANISMS AND MACHINES
AND HAVE THE FOLLOWING TITLES: I. GENERAL
SESSION; II. SIGNAL RECEPTION BY LIVING
ORGANISMS; III. INFORMATION PROCESSING BY
LIVING ORGANISMS; IV. PHYSICAL PRINCIPLES OF
BIONICS; AND V. APPLICATION OF BIONIC
CONCEPTS. BIOLOGICAL, MATHEMATICAL, AND
ENGINEERING PAPERS ARE EQUALLY REPRESENTED ATTACKING
THE PROBLEM OF UNDERSTANDING AND SIMULATING THE
SOPHISTICATED INFORMATION PROCESSING CAPABILITIES OF
LIVING ORGANISMS BY ARTIFICIAL MEANS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-439 502

NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
SIGNIFICANT PHYSIOLOGICAL PARAMETERS OF THE
BALLISTOCARDIOGRAPHY AS ANALYZED BY A MATHEMATICAL
MODEL.

(U)

JAN 64 22P MORSE, ROBERT L. I
MONITOR: NAVMED HR006 13 17004 11

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (BALLISTOCARDIOGRAPHY, ANALYSIS),
COMPUTERS, MATHEMATICAL MODELS, HUMANS,
ARTERIES, BLOOD VESSELS, BLOOD PRESSURE,
HEART, DETERMINATION

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-443 843

STANFORD UNIV CALIF STANFORD ELECTRONICS LABS
VECTORCARDIOGRAPHIC DIAGNOSIS UTILIZING ADAPTIVE
PATTERN-RECOGNITION TECHNIQUES, (U)

JUN 64 54P SPECHT, DONALD F. I

REPT. NO. SEL64 046 TR6783 1

CONTRACT: NONR22524

PROJ: NR372 360

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CARDIOVASCULAR DISEASES, DIAGNOSIS),
(*ELECTROCARDIOGRAPHY, PATTERN RECOGNITION), (*PATTERN
RECOGNITION, ELECTROCARDIOGRAPHY), VECTOR ANALYSIS,
ELECTRICAL PROPERTIES, ELECTRICAL EQUIPMENT,
SEQUENTIAL ANALYSIS, MEDICAL RESEARCH, HEART,
PATHOLOGY, COMPUTERS (U)

THE PURPOSE OF THIS RESEARCH WAS TO APPLY ADAPTIVE
PATTERN-RECOGNITION TECHNIQUES TO THE DIAGNOSIS OF
HEART DISEASE AS EVIDENCED IN VECTORCARDIOGRAMS.
TWO METHODS BY WHICH ADAPTIVE PATTERN-RECOGNITION
TECHNIQUES CAN BE APPLIED TO THE ANALYSIS OF
VECTORCARDIOGRAPHIC DATA WERE DEVELOPED AND TESTED.
THE FIRST METHOD, THE POLYHEDRON APPROACH,
CONSIDERS TRI-AXIAL SAMPLES TAKEN FROM THE
VECTORCARDIOGRAM AT VARIOUS TIMES AS SEPARATE DATA
POINTS IN THREE-DIMENSIONAL SPACE. THE SECOND
METHOD, SEQUENTIAL ADAPTIVE PROCESSING, CONSIDERS
ALL THE TIME SAMPLES FROM A GIVEN RECORD AS A SINGLE
POINT IN N-DIMENSIONAL SPACE. IT WAS FOUND THAT
SEQUENTIAL ADAPTIVE PROCESSING YIELDS BETTER RESULTS
THAN THE POLYHEDRON APPROACH BECAUSE, FOR ADEQUATE
TRAINING, THE LATTER REQUIRES MORE DATA SAMPLES THAN
WERE AVAILABLE. MORE IMPORTANT, IT WAS FOUND THAT
SEQUENTIAL ADAPTIVE PROCESSING YIELDS MUCH BETTER
RESULTS THAN THE CLINICAL ANALYSIS OF
ELECTROCARDIOGRAMS FOR DETECTION OF ABNORMALITIES,
WITH ONLY A SLIGHT DECREASE IN ACCURACY IN THE
DETECTION OF NORMAL WAVEFORMS. SOME RESEARCH WAS
ALSO DONE IN DISTINGUISHING INDIVIDUAL ABNORMALITIES
FROM ONE ANOTHER BY THE USE OF SEQUENTIAL ADAPTIVE
PROCESSING. (AUTHOR) (U)

UNCLASSIFIED

000391

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-457 349

AEROMEDICAL RESEARCH LAB (6571ST) HOLLOWAN AFB N MEX
DYNAMIC RESPONSE ANALYSIS OF +GX IMPACT ON MAN, (U)

NOV 64 45P FEDER, H. C. (ROOT, E. H. I

REPT. NO. ARL TN64 11

PROJ: 7231

TASK: 723106

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*STRESS (PHYSIOLOGY), DECELERATION),
(*DECELERATION, MEASURING DEVICES (ELECTRICAL +
ELECTRONIC)), REACTION (PSYCHOLOGY), BIOPHYSICS, TEST
METHODS, TEST EQUIPMENT, ANATOMICAL MODELS, MODELS
(SIMULATIONS), IMPACT SHOCK, ACCELEROMETERS, ANALOG
SYSTEMS, ANALOG COMPUTERS, SPACE MEDICINE, HUMANS,
THORAX (U)

AN ANALOG COMPUTER WAS USED TO COMPARE THE DYNAMIC
RESPONSE OF AN ACCELEROMETER PLACED OVER THE STERNUM
OF HUMAN TEST SUBJECTS DURING IMPACT IN +G SUB X
DIRECTION WITH THE RESPONSE OF SECOND AND HIGHER
ORDER SPRING-MASS SYSTEMS. IDENTITY OF THE
RESPONSE MODES OF BOTH SYSTEMS, HUMAN AND MECHANICAL,
WAS APPROXIMATED BY TRIAL AND ERROR MODIFICATION OF
NATURAL FREQUENCY AND DAMPING COEFFICIENT OF THE
COMPUTER MODEL USED, WITH RESTRICTION TO ONLY A
FEW CASES INVESTIGATED AND TO THE PARTICULAR TEST
CONDITIONS. BEST COMPLIANCE OF COMPLETE RESPONSE
COVERAGE IS CONSIDERED TO RESULT FROM THE APPLICATION
OF A SINGLE SPRING-MASS SYSTEM OF IRREGULARLY VARYING
DAMPING COEFFICIENT. A PARAMETRIC ANALYSIS OF THE
SINGLE SPRING-MASS SYSTEM IS PRESENTED TO AID THE USE
OF STANDARDIZED IMPACT PROFILES. THE USEFULNESS OF
THE METHOD OF RESPONSE APPROXIMATION HAS BEEN
ESTABLISHED, BUT THE VALIDATION OF THE UNDERLYING
CONCEPT OF RESPONSE PREDICTABILITY NEEDS FURTHER
INVESTIGATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-467 733

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
THE PERSONALIZED TELEMETRY MEDICAL MONITORING AND
PERFORMANCE DATA-GATHERING SYSTEM FOR THE 1962 SAM-
MATS FATIGUE STUDY. (U)

DESCRIPTIVE NOTE: REPT. FOR JUN 60-JAN 62,

APR 65 29P SIMONS, DAVID G. I

PRATHER, WESLEY I COOMBS, FRANKLIN K. I

REPT. NO. SAM-TR-65-17

PROJ: 7758 ,7751

TASK: 775506

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (DATA PROCESSING SYSTEMS, MEDICAL
EXAMINATION), (AVIATION MEDICINE,
INSTRUMENTATION), TELEMETERING DATA, FLIGHT
CREWS, RESPIRATION, ELECTROCARDIOGRAPHY,
GALVANIC SKIN RESPONSE, TELEMETERING TRANSMITTERS,
TELEMETRY SYSTEMS (U)

IDENTIFIERS: BIOMEDICAL MONITORS, BIOSENSORS (U)

THIS REPORT DESCRIBES THE INSTRUMENTATION USED FOR
GATHERING AND RECORDING DATA FOR THE 1962 USAF SAM-
MATS, FATIGUE STUDY AT DOVER AFB, DEL. SIX
BIOMEDICAL MEASURES AND SIX PERFORMANCE MEASURES WERE
RECORDED CONTINUOUSLY WHILE 4 PILOTS ACCOMPLISHED AN
AIRCRAFT SIMULATOR 'FLIGHT' OF 24 HOURS EACH. THE
BIOMEDICAL MONITORING INSTRUMENTATION INCLUDED EEG,
ECG, RESPIRATION, SKIN TEMPERATURE, BSR, AND
GSR. A 6-CHANNEL PERSONALIZED BIOMEDICAL RADIO
TELEMETRY SYSTEM WAS USED TO TRANSMIT THESE MEASURES.
CONTINUOUSLY RECORDED PERFORMANCE MEASURES INCLUDED
THREE PILOT-CONTROL FUNCTIONS AND THREE AIRCRAFT
INSTRUMENT READINGS. THE CIRCUITRY AND FUNCTIONS
OF THE PERSONALIZED TELEMETRY SYSTEM ARE DETAILED,
INCLUDING TECHNIQUES DEVELOPED TO RESOLVE ALL MAJOR
PROBLEMS ENCOUNTERED. MOST OF THE RECORDED DATA
WERE SUITABLE FOR VISUAL PATTERN ANALYSIS.
(AUTHOR) (U)

UNCLASSIFIED

JDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-600 580

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
ELECTRONIC DEVICE FOR SIMULATING THE ELECTRICAL
ACTIVITY OF THE HEART. (U)

MAR 64 19P AKULINICHEV, I. T. IBADSKII, E. B.
IGEL'SHTEIN, G. G. PETROV, G. M. ISKACHKOVA, A. I. I
MONITOR: FTD ,TT TT63 11981 ,64 11686

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MEMO.
ELEKTRONIKA V MEDITSINE ELECTRONICS IN MEDICINE
MOSCOW/LENINGRAD, 1960, P. 312-326.

DESCRIPTORS: (*BIONICS, HEART), (*HEART, BIONICS),
(*ELECTROCARDIOGRAPHY, CYBERNETICS), COMPUTERS, USSR,
SIMULATION (U)

SIMULATION OF THE ELECTRICAL ACTIVITY OF THE HEART
WAS USED FOR STUDYING THE CAUSES OF VARIOUS TYPES OF
ELECTROCARDIOGRAMS. ELECTRONIC DEVICES WHICH
SIMULATE THE ELECTRICAL ACTIVITY OF THE HEART CAN BE
USED AS A VISUAL TRAINING AID IN THE STUDY OF
ELECTROCARDIOGRAPHY. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-604 526

RAYTHEON CO WALTHAM MASS

SPEECH RECOGNITION BY FEATURE-ABSTRACTION
TECHNIQUES.

(U)

DESCRIPTIVE NOTE: INTERIM REPT., FOR MAY 53-JUN 64,

AUG 64 296P

MARTIN, T. D. INELSON, A. L. ;

ZADELL, H. J. 1

CONTRACT: AF33 657 1153B

PROJ: 4336

TASK: 433621

MONITOR: AL ,

TDR64 176

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (SPEECH RECOGNITION, COMPUTERS),
(SPACE COMMUNICATION SYSTEMS, SPEECH TRANSMISSION),
BAND-PASS FILTERS, NETWORKS, CIRCUITS, NEUROLOGY,
ELECTRONIC EQUIPMENT, VOICE COMMUNICATION SYSTEMS,
ACOUSTICS, VOCABULARY, AUTOMATIC, NARROWBAND, SPECTRUM
ANALYZERS

(U)

IDENTIFIERS: DC NEURONS

(U)

A SPEECH-ANALYSIS SYSTEM USING ANALOG-THRESHOLD LOGIC (ATL) FOR FEATURE ABSTRACTION HAS BEEN DEVELOPED TO RECOGNIZE CONSONANTS IN UTTERANCES OF CVC WORDS BY A NUMBER OF TALKERS. THE FEATURE-ABSTRACTION NETWORKS USE A SINGLE ATL ELEMENT FOR MOST OF THE LOGIC FUNCTIONS. THE ATL ELEMENT, ORIGINALLY MODELED AFTER THE BIOLOGICAL NEURON, HAS AN OUTPUT WHICH IS LINEARLY PROPORTIONAL TO THE NET SUM OF EXCITATORY AND INHIBITORY INPUTS, PROVIDED THAT THIS NET SUM IS GREATER THAN SOME ADJUSTABLE THRESHOLD. USING NETWORKS OF ATL ELEMENTS, BOTH THE PRESENCE AND MAGNITUDE OF SIGNIFICANT FEATURES CAN BE ABSTRACTED IN REAL TIME FROM THE SPEECH SIGNALS. THE RECOGNITION EQUIPMENT IS CAPABLE OF ABSTRACTING THESE FEATURES OVER A 60-DB DYNAMIC RANGE FROM THE LOGARITHMITIZED OUTPUTS OF 19 LOW-Q, BAND-PASS FILTERS. THE SPEECH-RECOGNITION EQUIPMENT CONTAINS MORE THAN 500 ATL ELEMENTS AND WAS DESIGNED TO OPERATE IN REAL TIME, TO UTILIZE PARALLEL PROCESSING IN THE FEATUREABSTRACTION NETWORKS AND NOT TO REQUIRE SEGMENTATION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-604 567

NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
AN INSTRUMENT FOR ELECTROCARDIOGRAPHIC AREA
MEASUREMENTS.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.

MAY 64 22P ARNOLD, THOMAS G., JR. 1

SMITH, RAPHAEL F. 1

PROJ: MR005 13 7004

TASK: 8

MONITOR: NSAM , RR1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (ANALOG COMPUTERS,
ELECTROCARDIOGRAPHY), (ELECTROCARDIOGRAPHY, ANALOG
COMPUTERS), MEDICAL EQUIPMENT, HEART, EXERCISE,
DEFLECTION

(U)

AN INSTRUMENT WHICH WAS DEVELOPED TO MEASURE THE
AREA OF ELECTROCARDIOGRAPHIC DEFLECTIONS IS
DESCRIBED. BASICALLY, THE INSTRUMENT IS A SPECIAL
PURPOSE ANALOG COMPUTER THAT PERFORMS THE
MATHEMATICAL OPERATION OF INTEGRATION ON THREE INPUT
SIGNALS. SYNCHRONIZING CIRCUITS HAVE BEEN ADDED TO
START THE PERIOD OF INTEGRATION AT A PREDETERMINED
TIME IN THE CARDIAC CYCLE. THIS INSTRUMENT IS AN
ESSENTIAL COMPONENT IN A SYSTEM USED TO QUANTITATE
THE ECG CHANGES THAT OCCUR AFTER EXERCISE.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-610 589

LAFAYETTE CLINIC DETROIT HIGH PSYCHOPHYSIOLOGY LAB
VALIDATION OF THE AEROSPACE MEDICAL RESEARCH
LABORATORIES 3-CHANNEL PERSONAL TELEMETRY SYSTEM. (U)
DESCRIPTIVE NOTE: FINAL REPT. FOR 24 MAY 62-28 MAR 64.

DEC 64 34P AX, ALBERT F. I
CONTRACT: AF33 657 9302
PROJ: 7222
MONITOR: AMRL , TR64 124

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•TELEMETER SYSTEMS, PHYSIOLOGY),
(•SPACE MEDICINE, TELEMETER SYSTEMS),
PSYCHOPHYSIOLOGY, ASTRONAUTS, TELEMETERING
TRANSMITTERS, DATA PROCESSING SYSTEMS, RESPIRATION,
ELECTROCARDIOGRAPHY, ELECTROENCEPHALOGRAPHY, GALVANIC
SKIN RESPONSE, BODY TEMPERATURE, STRESS (PHYSIOLOGY),
BIOPHYSICS, PULSE MODULATION, CIRCUITS (U)
IDENTIFIERS: PERSONAL TELEMETRY SYSTEMS,
ELECTROPHYSIOLOGY (U)

THE ART OF PHYSIOLOGICAL TELEMETRY IS BORDERLINE IN
THREE AREAS: (1) SENSORS, (2) TRANSMITTER,
(3) DATA PROCESSING. THIS STUDY ASSESSED THE
AMRL 3-CHANNEL PERSONAL TELEMETRY FROM ALL THREE
ASPECTS. ANALYSIS OF THE RECORDS TRANSMITTED FROM
MEN IN VARIOUS GRADED INTENSITIES OF PHYSICAL
ACTIVITY REVEALED THAT OF THE THREE PHYSIOLOGICAL
VARIABLES (RESPIRATION, EKG, AND TEMPERATURE),
RESPIRATION WAS THE LEAST VALID. TORSO
CIRCUMFERENCE CHANGES SENSED BY RUBBER TUBE STRAIN
GAGES PROVED SUPERIOR TO THE IMPEDANCE METHOD FOR
MEASURING RESPIRATION. SOME TENTATIVE FINDINGS ON
A STRESS INTERVIEW STUDY REVEAL THE TELEMETRY METHOD
TO HAVE PROMISE. IT WAS SHOWN THAT THE MAJOR
DIFFICULTY PREVENTING WIDESPREAD USE OF PHYSIOLOGICAL
TELEMETRY IN SIGNIFICANT FIELD SITUATIONS IS THE LACK
OF A PRACTICABLE HIGH-SPEED DATA PROCESSING SYSTEM
WHICH CAN DISTINGUISH AND UTILIZE THE OCCASIONALLY
VALID PHYSIOLOGICAL SIGNAL EMERSED IN ARTIFACT OR
NOISE PRODUCED BY MOVEMENTS AND CHANGING
ENVIRONMENTAL INFLUENCES. THE SOLUTION TO THE
ARTIFACT PROBLEM IS FIRST TO SENSE AND UTILIZE
MOVEMENT AND ENVIRONMENTAL INFLUENCES TO GATE OUT AND
TO CORRECT THE PHYSIOLOGICAL DATA AND SECOND TO
DEVELOP AUTOMATIC EDITING APPARATUS AND COMPUTER
PROGRAMS FOR RECOGNITION AND SELECTION OF THE VALID
SIGNAL PATTERNS. (AUTHOR) 162 (U)

UNCLASSIFIED

000391

UNCLASSIFIED

DD: REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-610 733

OHIO STATE UNIV COLUMBUS SCHOOL OF OPTOMETRY

THE POSITIVE AFTERIMAGE AND MEASUREMENTS OF LIGHT AND
DARK ADAPTATION. (U)

DESCRIPTIVE NOTE: REPT. FOR: SEP 62-31 OCT 64;

OCT 64 44P FRY, GLENN A. I

CONTRACT: AF33 657 9415

PROJ: 6301

TASK: 630103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RETINA, ADAPTATION (PHYSIOLOGY)),
(*PHOTORECEPTORS, SIMULATORS), (*VISION, ADAPTATION
(PHYSIOLOGY), (*AFTERIMAGES, ADAPTATION (PHYSIOLOGY),
LIGHT, BIONICS, ANALOG COMPUTERS, OPHTHALMOLOGY (U)
IDENTIFIERS: FOVEA (U)

IN MANY PRACTICAL SITUATIONS IT IS DESIRABLE TO
KNOW THE EXTENT TO WHICH ADAPTATION AT THE CENTER OF
THE FOVEA UNDERGOES CHANGE AND TO WHAT EXTENT THIS
AFFECTS PERFORMANCE OF A GIVEN TASK. THIS PAPER
DESCRIBES AN ATTEMPT TO SOLVE THIS PROBLEM BY
CONSTRUCTING A SYSTEM WITH A SENSOR WHICH WILL
SIMULATE THE CHANGES IN POSITION AND DIRECTION OF AN
EYE AND PROVIDE A RUNNING RECORD OF CHANGES IN
RETINAL ILLUMINANCE AT THE CENTER OF THE FOVEA.
THE NEXT STEP IS TO BUILD AN ANALOG COMPUTER WHICH
WILL COMPUTE CHANGES IN MECHANISMS OF ADAPTATION
FOUND IN THE PHOTORECEPTORS. AN ANALOG COMPUTER WAS
DESIGNED TO DO THIS AND TAKES INTO CONSIDERATION THE
PRIMARY AND SECONDARY RESPONSES OF THE
PHOTORECEPTORS. A STUDY OF THE POSITIVE AFTERIMAGE
WAS CARRIED OUT WITH THE AIM OF MAKING ALLOWANCE FOR
ITS EFFECT ON THE STATE OF ADAPTATION. THE
PROBLEMS OF CHROMATIC ADAPTATION WERE CONSIDERED, BUT
THE ANALOG COMPUTER DESCRIBED IN THIS REPORT IS
BASICALLY A DEVICE FOR COMPUTING CHANGES IN BRIGHT
AND DARK ADAPTATION. THE EQUATIONS AND CONSTANTS
USED IN DESIGNING THE COMPUTER ARE BASED PRIMARILY ON
RUSHTON'S MEASUREMENTS OF RETINAL BLEACHING AND
WRIGHT'S SUBJECTIVE MEASUREMENTS OF BRIGHT AND DARK
ADAPTATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-618 108

STANFORD MEDICAL CENTER PALO ALTO CALIF

METABOLIC EFFECTS OF BLOOD TRANSFUSION.

DESCRIPTIVE NOTE: PROGRESS REPT. FOR 1 JUL 64-30 JUN 65. (U)

JUN 65 SP BUNKER, JOHN P. 1
CONTRACT: DA49 193MD2135

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (BLOOD TRANSFUSION, METABOLISM),
HEART, PATHOLOGY, ACIDOSIS, BARBITURATES,
CALCIUM, IONS, POTASSIUM, PHOSPHATES, SODIUM
COMPOUNDS, CITRATES, CARDIAC GLYCOSIDES, BLOOD
CIRCULATION, SHOCK (PATHOLOGY), TRANSPLANTATION,
BALLISTOCARDIOGRAPHY, ANALOG COMPUTERS, DRUGS,
PH, DOGS (U)

CONTENTS: EFFECT OF METABOLIC ACIDOSIS ON
MYOCARDIAL CONTRACTILITY INTERACTION BETWEEN
PENTOUARBITAL AND DECREASED CAL CIUM ION ON GUINEA
PIG ATRIA THE ULTRA-LOW FREQUENCY
BALLISTOCARDIOGRAM IN DOGS AFTER
AUTOTRANSPLANTATION OF THE HEART ESTIMATION OF
STROKE VOLUME BY ANALOG COMPUTER SOLUTION OF THE
STARR BALLISTIC FORMULA. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-618 111

STANFORD MEDICAL CENTER PALO ALTO CALIF
ESTIMATION OF STROKE VOLUME BY ANALOG COMPUTER
SOLUTION OF THE STARR BALLISTIC FORMULA,

(U)

63 14P SMITH, N. TY I
FLEISCHLI, GERALD J. ICORBASCIO, ALDO N. I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•BALLISTOCARDIOGRAPHY, ANALOG
COMPUTERS), HEART, MEDICAL EQUIPMENT, ELECTRONIC
RECORDING SYSTEMS, BLOOD CIRCULATION, STIMULATION,
DRUGS, ARRHYTHMIA, PROGRAMMING (COMPUTERS)

(U)

IDENTIFIERS: STROKE VOLUME (HEART)

(U)

A PROGRAM FOR THE ANALOG COMPUTER SOLUTION OF THE
STARR BCG FORMULA IS PRESENTED. THE MOST
IMPORTANT CONTRIBUTION OF THIS METHOD IS THE USE OF
RELAYS TO SELECT ANY WAVE OR SET OF WAVES OF THE
BCG. IT THEREFORE HAS APPLICATIONS IN OTHER
ANALYSES OF THE BCG. COMPARISONS WITH DYEDILUTION
CARDIAC OUTPUTS IN DOGS UNDER VARIOUS CIRCULATORY
CONDITIONS SHOWS FAITHFUL REPRODUCTION OF CHANGES IN
STROKE VOLUME. THE ADVANTAGES AND DISADVANTAGES OF
THE METHOD ARE DISCUSSED. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-634 113 6/19 22/1 6/3
AEROSPACE TECHNOLOGY DIV LIBRARY OF CONGRESS WASHINGTON D
C
SOVIET BIOTECHNOLOGY AND BIOASTRONAUTICS, DECEMBER
1964-JUNE 1965; COMPILATION OF ABSTRACTS. (U)
DESCRIPTIVE NOTE; REPT. NO. 2 ON ATD WORK ASSIGNMENT NO.
22,
FEB 66 234P DODGE, CHRISTOPHER H. I
REPT. NO. ATD-66-14,
MONITOR: TT , 66-61467

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: BASED ON SOVIET-SATELLITE OPEN
SOURCES PUB. 1962-65. REPT. ON SURVEYS OF SOVIET
SCIENTIFIC AND TECHNICAL LITERATURE.

DESCRIPTORS: (SPACE BIOLOGY, ABSTRACTS),
(SPACE MEDICINE, ABSTRACTS), VIBRATION,
ACCELERATION TOLERANCE, DECELERATION,
STRESS(PHYSIOLOGY), RADIOBIOLOGY,
HYPOTHERMIA, DECOMPRESSION SICKNESS, HYPOXIA,
LIFE SUPPORT, HUMAN ENGINEERING, ASTRONAUTS,
TELEMETER SYSTEMS, DATA PROCESSING SYSTEMS,
SPACE FLIGHT, GRAVITY(ARTIFICIAL), SPACE
ENVIRONMENTAL CONDITIONS, MAN-MACHINE SYSTEMS,
USSR

(U)

THE COMPILATION OF ABSTRACTS IS BASED ON SOVIET-
SATELLITE OPEN SOURCES PUBLISHED 1962-1965. IT
REFLECTS SOVIET RESEARCH IN THE FIELDS OF SPACE
BIOLOGY, BIOASTRONAUTICS, AND BIOTECHNOLOGY PUBLISHED
FOR THE MOST PART DURING THE LAST QUARTER OF 1964 AND
THE FIRST TWO QUARTERS OF 1965. THERE ARE 132
ENTRIES IN THE FORM OF INDICATIVE ABSTRACTS, EXPANDED
ABSTRACTS, AND ANALYTICAL REVIEWS; THESE ENTRIES HAVE
BEEN ARRANGED IN ELEVEN PARTS ACCORDING TO SUBJECT:
PART I. EFFECTS OF ALTERED GRAVITY (15
ENTRIES); PART II. EFFECTS OF VIBRATION ON
PHYSIOLOGICAL FUNCTION (15 ENTRIES); PART III.
BIOLOGICAL EFFECTS OF RADIATION (12 ENTRIES);
PART IV. EFFECTS OF HYPOTHERMIA ON MAMMALS (7
ENTRIES); PART V. EFFECTS OF ALTERED GAS
ENVIRONMENTS (34 ENTRIES); VI. EFFECTS OF
COMBINED STRESSES (12 ENTRIES); VII. BIOMEDICAL
EFFECTS OF SPACE FLIGHT (6 ENTRIES); VIII. LIFE
SUPPORT SYSTEMS (8 ENTRIES); IX. HUMAN
ENGINEERING AND MAN-MACHINE FACTORS (11 ENTRIES);
PART X. MONITORING, BIOTELEMETRY, AND DATA
PROCESSING (16 ENTRIES); PART XI.
MISCELLANEOUS: FUTURE FLIGHTS, ZOOBIOLOGY,
ECOPHYSIOLOGY (6 ENTRIES). THE FIRST PAGE OF

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-634 31: 17/9 4/2
AIRBORNE INSTRUMENTS LAB DEER PARK N Y
PRECISION INTEGRATOR FOR METEOROLOGICAL ECHOES
(PRIME). (U)

DESCRIPTIVE NOTE: FINAL REPT., APR 64-DEC 65,
DEC 65 90P HALL, SCOTT P. I
GREENBERG, DAVID L. I
REPT. NO. 3940-1,
CONTRACT: AF 19(628)-4163,
PROJ: AF-6672,
TASK: 667201,
MONITOR: AFRL 66-158

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (METEOROLOGICAL RADAR, RADAR ECHO
AREAS), (INTEGRATORS (COMPUTERS)), (RADAR ECHO
AREAS), WEATHER FORECASTING, METEOROLOGICAL
PARAMETERS, RADAR SCANNING, DATA PROCESSING
SYSTEMS, ANALOG COMPUTERS, LOGARITHMIC AMPLIFIERS,
RANGE GATING (U)
IDENTIFIERS: PRIME (U)

THE PRECISION INTEGRATOR FOR METEOROLOGICAL
ECHOES (PRIME) IS A VERSATILE RANGE-GATED, ANALOG
INTEGRATOR USED TO ESTIMATE THE MEAN REFLECTIVITY OF
THE RADAR RETURNS FROM CLOUDS AND STORMS. A LOG-
IF AMPLIFIER CONVERTS THE RETURNS TO THE LOGARITHM
OF THE SIGNAL AMPLITUDE. THE RANGE RESOLUTION IS
SELECTABLE IN SEVEN STEPS FROM 0.05 TO 0.8 STATUTE
MILE, WITH A VARIABLE START OF RANGE. CONTIGUOUS
RANGE INTEGRATION IS ALSO INCLUDED IN THE SAME SEVEN
STEPS. THE TIME OF INTEGRATION IN ALL RANGE
ELEMENTS IS CONTINUOUSLY VARIABLE FROM 5 TO 500 MSEC
BY A SINGLE CONTROL. IN ADDITION TO REFLECTIVITY,
THE OUTPUT MAY REPRESENT OTHER SIGNIFICANT
METEOROLOGICAL PARAMETERS AT THE OPERATOR'S CHOICE.
THE PRIME EQUIPMENT HAS A DYNAMIC RANGE OF 80 DB.
PRIME WILL OPERATE WITH ANY CONVENTIONAL RADAR
HAVING PRF'S FROM 200 TO 5000 PPS AND PULSE WIDTHS
FROM 0.5 TO 6 MICRO SEC. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-636 079 6/16 6/5
BRUSSELS UNIV (BELGIUM) INSTITUT SOLVAY DE
PHYSIOLOGIE
COMPUTER ANALYSIS OF THE ELECTROCARDIOGRAM. (U)
61 33P RIJANT, PIERRE I
CONTRACT: AF-EOAR-61-10,

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN ELECTROPHYSIOLOGY OF THE
HEART, P309-40 PROCEEDINGS OF A MEETING, 11-13 OCT
63, ISTITUTO DI CARDIOLOGIA SPERIMENTALE DEI
SERVIZI SCIENTIFICI SIMES, MILAN, ITALY.
SUPPLEMENTARY NOTE:

DESCRIPTORS: (ELECTROCARDIOGRAPHY, ANALOG
COMPUTERS), (HEART, ELECTROPHYSIOLOGY), DIPOLE
MOMENTS, NETWORKS, RESISTORS, BELGIUM (U)

THE ISOMORPH OF A NON-EUCLIDIAN SPACE HAS BEEN
SYSTEMATICALLY UTILIZED FOR THE LAST SIX YEARS, THE
SUMMATION NETWORK FOR THE LAST TWO YEARS. THE
EQUIVALENT DIPOLE HAS BEEN ESTABLISHED FOR SEVERAL
THOUSAND SO-CALLED NORMAL INDIVIDUALS, MALE AND
FEMALE AND OF DIFFERENT AGE GROUPS AND OF DIFFERENT
SOCIAL OR PROFESSIONAL GROUPS. SEVERAL HUNDREDS OF
PATIENTS HAVE ALSO HAD THEIR DIPOLE MOMENTS
ESTABLISHED. THIS INFORMATION IS PERMANENTLY
RECORDED ON MAGNETIC TAPE ON CLOSED LOOPS OF AN
AVERAGE LENGTH OF 10 BEATS UNLESS EXTRASYSTOLIC
ACTIVITY HAS BEEN LOOKED FOR. AT LEAST TWO AND
FREQUENTLY MORE LOOPS HAVE BEEN RECORDED EITHER UNDER
IDENTICAL CONDITIONS, OR AFTER EXERCISE OR IN
DIFFERENT POSITIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-636 338 6/16 9/2
BRUSSELS UNIV (BELGIUM) INSTITUT SOLVAY DE
PHYSIOLOGIE
COMPUTER ANALYSIS OF THE ELECTROCARDIOGRAM. (U)
DESCRIPTIVE NOTE: SEMIANNUAL REPT.
66 4P PIERRE, RIJLANT I
CONTRACT: AF-EOAR-61-10,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, MATHEMATICAL
ANALYSIS), COMPUTERS, ANATOMICAL MODELS, BODY,
HEART, DIPOLE MOMENTS, ELECTROPHYSIOLOGY,
MAGNETIC TAPE, BELGIUM (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-637 452 9/2 6/5
IBM WATSON RESEARCH CENTER YORKTOWN HEIGHTS N Y
RESEARCH ON ADVANCED COMPUTER METHODS FOR BIOLOGICAL
DATA PROCESSING. (U)
DESCRIPTIVE NOTE: FINAL REPT., 15 JUL 64-14 JUN 65.
APR 66 57P STREETER, D. N. TRAVIV, J. I
REPT. NO. RC-1513,
CONTRACT: AF 33(615)-2047,
PROJ: AF-7233,
TASK: 723305,
MONITOR: AMRL TR-66-24

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (MEDICAL EXAMINATION, DATA
PROCESSING SYSTEMS), COMPUTERS, BIOLOGY, NERVOUS
SYSTEM, ELECTROENCEPHALOGRAPHY (U)
IDENTIFIERS: LOEVE-KARHUNEN EXPANSION (U)

THE PURPOSE OF THE RESEARCH IS THE DEVELOPMENT OF
MATHEMATICAL METHODS AND COMPUTER PROGRAMS FOR THE
EXTRACTION OF MEANINGFUL INFORMATION FROM BIOLOGICAL,
PRIMARILY NEUROPHYSIOLOGICAL, MEASUREMENTS.
EMPHASIS WAS PLACED ON STATISTICAL METHODS SUITABLE
FOR SEPARATING TWO OR MORE RANDOM SIGNALS AND WHICH
PROVIDE INSIGHT INTO THE UNDERLYING MECHANISM BY
WHICH THE SIGNALS ARE GENERATED. LOEVE-KARHUNEN
EXPANSION AND DISCRIMINANT ANALYSIS METHODS ARE
APPLIED TO THE PROBLEM OF TIME SIGNAL CLASSIFICATION.
EXPERIMENTS ARE PERFORMED BOTH ON COMPUTER
GENERATED TIME SIGNALS AND ON ELECTROENCEPHALOGRAMS.
METHODS OF COPING WITH THE SINGULARITY PROBLEM
ARISING FROM A SMALL SAMPLE SIZE ARE INVESTIGATED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-637 483 6/5
CLINICAL INVESTIGATION CENTER OAKLAND CALIF
BROAD-SPECTRUM COMPUTER ANALYSES OF
ELECTROENCEPHALOGRAMS IN BASIC PSYCHOPATHOLOGIC
DISORDERS. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.
JUL 66 10P KURLAND, HOWARD D. I
YEAGER, CHARLES L. I
REPT. NO. CIC-TR-27,
CONTRACT: NONR-222(E1), NONR-2931(00)
PROJ: NR-105-156,
MONITOR: NAVMED MRO05.12-2101.6

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN RECENT ADVANCES IN
BIOLOGICAL PSYCHIATRY V8 P313-9 1966.
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MENTAL DISORDERS,
*ELECTROENCEPHALOGRAPHY), (*PSYCHIATRY,
ELECTROENCEPHALOGRAPHY), DIAGNOSIS, COMPUTERS,
PSYCHOSES, NEUROSES, BEHAVIOR, FREQUENCY
ANALYZERS, STATISTICAL ANALYSIS (U)

THE PAPER DESCRIBES A STUDY TO ASSESS THE RELATIVE
CLINICAL VALUES OF VARIOUS METHODS OF INTERPRETING
THE ELECTROENCEPHALOGRAMS OF PATIENTS WITH
CONTRASTING FUNCTIONAL PSYCHIATRIC DISORDERS, BY
EVALUATING THE COMPLIMENTARY COMPUTER TECHNIQUES OF
FREQUENCY AND PERIOD ANALYSES, AND BY COMPARING THESE
METHODS OF INTERPRETATION WITH THAT OF VISUAL
EXAMINATION OF PEN-WRITTEN RECORDS. A PROBLEM IN
THE COMPUTER CIRCUITRY, UNDISCOVERED ON TEST RUNS,
RESULTED IN DATA WHICH APPEAR INVALID. THESE
RESULTS EMPHASIZE THE NECESSITY OF INCORPORATING
SYSTEMATIC EVALUATIONS TO REJECT SPURIOUS ANALYSES.
VISUAL EVALUATION OF PEN-WRITTEN
ELECTROENCEPHALOGRAMS CAN PROVIDE AN INVALUABLE
SOURCE OF INFORMATION FOR ESTIMATING THE VALIDITY OF
COMPUTER ANALYSES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-639 761 6/5 5/2 6/3 2/5
ARMY MEDICAL RESEARCH AND NUTRITION LAB DENVER COLO
USE OF THE ELECTRONIC COMPUTER IN RETRIEVAL OF
VETERINARY PATHOLOGIC DATA, (U)
DEC 64 6P CASTLEBERRY, M. W. 1
JENKINS, EDWARD D. 1 THOMPSON, S. W. , 11.1

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN THE AMERICAN JOURNAL
OF VETERINARY RESEARCH V27 N118 P824-9 MAY 1966.
SUPPLEMENTARY NOTE:

DESCRIPTORS: (•PATHOLOGY, •INFORMATION
RETRIEVAL), (•VETERINARY MEDICINE, INFORMATION
RETRIEVAL), COMPUTERS, LABORATORY ANIMALS,
PROGRAMMING (COMPUTERS) (U)

THE USE OF AN ELECTRONIC COMPUTER IN AN
EXPERIMENTAL PATHOLOGY LABORATORY TO RETRIEVE DATA ON
ACCESSIONS WAS STUDIED. SEPARATE LISTS OR CODES
WERE MADE FOR ANATOMICAL SITES, PATHOLOGIC CHANGES,
AND CASE IDENTIFYING DATA. INDIVIDUAL ENTRIES WERE
NUMERICALLY DESIGNATED WITH THE EXCEPTION OF THE
SENSING SYMBOL AND SEX, WHICH WERE ALPHABETICALLY
IDENTIFIED. A 21-DIGIT FORMAT WAS DEVELOPED TO
PROGRAM COMPUTER INPUT AND INTERROGATION. FOUR
HUNDRED CASE RECORDS (ACCESSIONS) WERE CODED. THE
INFORMATION WAS STORED IN A COMPUTER DATA RECORD, AND
THE MACHINE SUBSEQUENTLY WAS INTERROGATED WITH
QUESTIONS HAVING KNOWN ANSWERS. ANSWERS, IN THE
FORM OF CASE ACCESSION NUMBERS, WERE QUICKLY AND
ACCURATELY OBTAINED. IT IS BELIEVED THIS DATA
RETRIEVAL SYSTEM HAS APPLICABILITY TO LARGE,
LIFESCIENCE RESEARCH CENTERS OR GROUPS HAVING ACCESS
TO AN ELECTRONIC COMPUTER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-641 113 6/19 22/1
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
PHYSIOLOGICAL METHODS IN ASTRONAUTICS, (U)
AUG 66 303P BAEVSKII, R. M. I
REPT. NO. FTD-MT-66-42,
MONITOR: TT 66-62515

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO.
FIZIOLOGICHESKIE METODY V KOSMONAVTIKE, MOSCOW, 1966
299P.

DESCRIPTORS: (SPACE MEDICINE, TELEMETER
SYSTEMS), DATA TRANSMISSION SYSTEMS, SPACECRAFT,
INFORMATION THEORY, ASTRONAUTICS, TRANSDUCERS,
ELECTRODES, SPACE FLIGHT, MONITORS, COMPUTERS,
ELECTROCARDIOGRAPHY, ASTRONAUTS, DATA STORAGE
SYSTEMS, VESTIBULAR APPARATUS, GALVANIC SKIN
RESPONSE, USSR (U)

CONTENTS: BRIEF HISTORICAL OUTLINE OF
PHYSIOLOGICAL SPACE RESEARCH; TRANSMISSION OF
PHYSIOLOGICAL INFORMATION FROM SPACECRAFT TO
EARTH; CONTEMPORARY PHYSIOLOGICAL MEASUREMENT
SYSTEMS ON SPACECRAFT; DESIGN PRINCIPLES OF
PHYSIOLOGICAL MEASUREMENT AND INFORMATION
SYSTEMS FOR USE ON LONG-TERM, LONG-RANGE
SPACE FLIGHTS; ON-BOARD AUTOMATIC
PHYSIOLOGICAL INFORMATION PROCESSING SYSTEMS;
SOME PROBLEMS OF PHYSIOLOGICAL MEASUREMENT IN
INTERPLANETARY FLIGHTS; CARDIOVASCULAR
RESEARCH METHODS; RESEARCH ON THE EXTERNAL
RESPIRATORY FUNCTION; METHODS FOR STUDYING
THE NEUROMUSCULAR SYSTEM AND WORKING
CAPACITY; METHODS FOR STUDYING THE VESTIBULAR
APPARATUS; FUTURE TRENDS IN THE DEVELOPMENT
OF PHYSIOLOGICAL RESEARCH IN ASTRONAUTICS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-642 126 6/4 6/16
MASSACHUSETTS INST OF TECH CAMBRIDGE
DYNAMICS OF THE SACCADIC EYE-MOVEMENT MECHANISM: AND
NEUROLOGICAL SERVOMECHANISMS: SECTION I, THE
CRAYFISH. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
NOV 66 123P COOK, GERALD I STARK, LAWRENCE
1
CONTRACT: AF 49(638)-1313
PROJ: AF-9777 DSR-75002
TASK: 977701
MONITOR: APOSR 66-2640

UNCLASSIFIED REPORT

DESCRIPTORS: (•VISION, ELECTROPHYSIOLOGY),
(•EYE, MOTION), (•CRUSTACEA, PHOTORECEPTORS),
(•NEUROMUSCULAR TRANSMISSION, MATHEMATICAL
MODELS), NUMERICAL METHODS AND PROCEDURES,
COMPUTERS, BEHAVIOR, HUMANS, VISUAL SIGNALS,
MUSCLES, NERVE IMPULSES, GANGLIA, NEUROLOGY,
NERVOUS SYSTEM, PHYSIOLOGY, FUNCTIONS (U)
IDENTIFIERS: ELECTROMYOGRAPHY (U)

DYNAMICS OF SACCADIC EYE-MOVEMENT MECHANISM: AN
ON-LINE COMPUTER WAS USED TO EXPERIMENTALLY MEASURE
THE DYNAMIC PERFORMANCE OF HORIZONTAL EYE MOVEMENT
SACCADDES. A MATHEMATICAL MODEL BASED UPON
PHYSIOLOGICAL MEASUREMENTS IN THE LITERATURE WAS
ASSEMBLED FOR THE PLANT--EYEBALL AND EYE MUSCLES.,
AND THE CONTROLLER SIGNALS-ENG. SIMULATION OF THE
MODEL WITH PARAMETER ADJUSTMENT LED TO REASONABLY
CLOSE AGREEMENT BETWEEN MODEL AND EXPERIMENTAL
OVERALL BEHAVIOR. IT WAS FOUND THAT ACTUAL
MOVEMENTS REQUIRE ABOUT THREE TIMES AS LONG FOR
COMPLETION AS WOULD BE NECESSARY IF THE SYSTEM
OPERATED WITH A MINIMUM TIME POLICY. NEUROLOGICAL
SERVOMECHANISMS: THE TRANSFER FUNCTION OF THE
CRAYFISH PHOTORECEPTOR IS EXAMINED, AND SUCCESSIVE
REFINEMENTS OF TECHNIQUE AND RECORDING IN THREE
SERIES OF EXPERIMENTS ARE DESCRIBED. IN THE FIRST
SERIES OF EXPERIMENTS GROSS RECORDINGS WERE MADE OF
AVERAGED FREQUENCY RESPONSES TO SINUSOIDAL INPUTS AT
SEVERAL DIFFERENT FREQUENCIES. THE INSTRUMENTATION
OF THE FIRST EXPERIMENTAL SERIES WAS SUPPLEMENTED IN
THE SECOND AND THIRD SERIES OF EXPERIMENTS BY A
'PULSE HEIGHT WINDOW' WHICH PERMITTED ONLY PULSES
FROM FIBERS RESPONDING TO LIGHT INTENSITY TO BE
RECORDED. IN ADDITION, MORE EXPERIMENTAL POINTS
WERE RECORDED THAN IN THE FIRST SERIES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-642 674 6/5
BRUSSELS UNIV (BELGIUM) INSTITUT SOLVAY DE
PHYSIOLOGIE
L'ANALYSE PAR UN CALCULATEUR ANALOGIQUE DES
ELECTROCARDIOGRAMMES SCALAIRES ET VECTORIELS.
VALEURS ABSOLUES ET COSINUS DIRECTEURS DES VECTEURS
(ANALYSIS BY ANALOG COMPUTER OF SCALED AND VECTORED
ELECTROCARDIOGRAMS. ABSOLUTE VALUES AND DIRECTIONAL
COSINES AND THE VECTORS), (U)
62 31P RIJLANT, P. 1
CONTRACT: AF-EOAR-61-10

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN BULLETIN DE L'ACADEMIE
ROYALE DE MEDECINE DE BELGIQUE V2 N5 P363-91
1962.
SUPPLEMENTARY NOTE: TEXT IN FRENCH.

DESCRIPTORS: (ELECTROCARDIOGRAPHY, ANALYSIS);
BELGIUM, ANALOG COMPUTERS (U)

REPRINT: ANALYSIS BY ANALOG COMPUTER OF SCALED
AND VECTORED ELECTROCARDIOGRAMS. ABSOLUTE VALUES
AND DIRECTIONAL COSINES AND THE VECTORS.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-647 410 6/5
NAVAL AEROSPACE MEDICAL INST PENSACOLA FLA
A COMPUTER METHOD FOR STUDYING THE POSTEXERCISE
BALLISTOCARDIOGRAM: (U)
SEP 66 20P JACKSON, DAVID M. I
MOLINA, EFRAIN A. I
REPT. NO. NAMI-978
MONITOR: NAVMED MRODS.20-0052-13

UNCLASSIFIED REPORT

DESCRIPTORS: (BALLISTOCARDIOGRAPHY, DATA
PROCESSING SYSTEMS), EXERCISE, COMPUTERS,
CARDIOVASCULAR DISEASES, ELECTROCARDIOGRAPHY,
DIAGNOSIS (U)

THE POSTEXERCISE BALLISTOCARDIOGRAM HAS BEEN SHOWN
TO BE A USEFUL DIAGNOSTIC TOOL BUT HAS ITS
LIMITATIONS BECAUSE OF ARTIFACTS WHICH RESULT FROM
MUSCLE TREMOR AND RESPIRATORY MOVEMENT, ESPECIALLY IF
THE EXERCISE IS VIGOROUS. AN ELECTRONIC SYSTEM
INCORPORATING A SMALL COMPUTER PREVIOUSLY SUGGESTED
FOR CLEARING ELECTROCARDIOGRAPHIC RECORDS OF
ARTIFACTS HAS BEEN APPLIED TO THE RECORDING OF LOW
FREQUENCY BALLISTOCARDIOGRAMS OBTAINED BEFORE AND
AFTER STANDARDIZED EXERCISE. EVALUATION OF THE
POSTEXERCISE TRACINGS AS TO ACCURATE REPRODUCTION AND
GOOD QUALITY SHOWS THIS SYSTEM TO BE FEASIBLE FOR USE
IN A LARGE SCALE POSTEXERCISE BALLISTOCARDIOGRAPHIC
STUDY. THE SYSTEM PRESENTED ALSO LACKS THE
COMPLEXITY OF THE ONE USED WITH ELECTROCARDIOGRAMS.
ANY DIFFICULTIES IN REPRODUCTION WERE FOUND TO BE
THOSE INHERENT IN THE BALLISTOCARDIOGRAPHIC APPARATUS
RATHER THAN IN THE SYSTEM ITSELF. LINES FOR
FURTHER INVESTIGATION ARE POINTED OUT.
(AUTHOR) (U)

UNCLASSIFIED

000391

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-657 789 6/5
HERNER AND CO WASHINGTON D C
APPLICATION OF AUTOMATIC LITERATURE ANALYSIS
TECHNIQUES TO PSYCHIATRIC INTERVIEWS. (U)
DEC 66 21P HERNER, SAUL ISEGAL, HENRY
A. ILEYMAN, EDWARD I
CONTRACT: AF 49(638)-1424
PROJ: AF-9769
TASK: 976901
MONITOR: AFOSR 47-2019

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
WASHINGTON SCHOOL OF PSYCHIATRY, D. C.

DESCRIPTORS: (PSYCHIATRY, DATA PROCESSING
SYSTEMS), AUTOMATIC, ANALYSIS, DIAGNOSIS,
DEFENSE MECHANISMS (PSYCHOLOGY), THERAPY (U)

THE REPORT DESCRIBES AN EXPERIMENT IN THE
APPLICATION OF LUHN'S AUTOENCODING AND
AUTOABSTRACTING TECHNIQUES TO THE ANALYSIS OF THE
CONTENTS OF PSYCHIATRIC INTERVIEWS. UTILIZING
MODIFICATION OF THE LUHN TECHNIQUES, APPLIED TO A
TRANSCRIPTION OF A RECORDED INTERVIEW, THE EXPERIMENT
PRODUCED A MATRIX OF WORDS RANKED BY FREQUENCY OF
OCCURRENCE AND BY FREQUENCY OF COMBINATION WITH OTHER
WORDS, AND AN EXTRACT CONSISTING OF RANKED SENTENCES
CONTAINING THE MOST FREQUENTLY OCCURRING WORDS AND
COMBINATIONS. A TENTATIVE EVALUATION BY A PANEL OF
PSYCHIATRISTS INDICATES THAT THE MATRIX AND EXTRACTS,
AS WELL AS THE SIMPLE WORD RANKINGS UPON WHICH THEY
ARE BASED, CAN PRODUCE CLEAR INSIGHTS REGARDING RANGE
OF AFFECT, MECHANISMS OF DEFENSE, OBJECT RELATIONS,
SYMPTOMS, HISTORY, AND EXPECTATIONS FROM TREATMENT.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-658 185 6/16 8/2
SAINT MARY'S HOSPITAL SAN FRANCISCO CALIF DEPT OF MEDICAL
EDUCATION
PHYSICAL FITNESS AND HUMAN TOLERANCE TO ACUTE
EXPOSURE TO LIFE AT HIGH ALTITUDE. EXPERIMENTAL
DESIGN AND DATA PROCESSING METHODOLOGY FOR CLINICAL
PHYSIOLOGICAL OBSERVATIONS. (U)
DESCRIPTIVE NOTE: PROGRESS REPT. 1967-1,
JAN 4. JSP FAVOUR, CUTTING B. 1
CONTRACT: DA-44-193-MD-3059

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON ACCELERATION OF
ACCLIMATIZATION TO HIGH ALTITUDE STUDIES CARRIED
OUT AT SEA LEVEL, INTERMEDIATE AND HIGH
ALTITUDES.

DESCRIPTORS: (ACCLIMATIZATION, EXPERIMENTAL
DESIGN), HIGH ALTITUDE, MEDICAL LABORATORIES,
DATA PROCESSING SYSTEMS, COLLECTING METHODS,
EXPERIMENTAL DATA, COMPUTERS, MEDICAL RESEARCH,
DOCUMENTATION (U)

A DESCRIPTION IS GIVEN OF THE METHODS BY WHICH
MEASUREMENTS OF VARIOUS PHYSIOLOGIC CHANGES DURING
EXPOSURE TO ALTITUDE WERE COLLECTED. THE TYPE OF
LOG BOOKS WHICH WERE KEPT ARE DESCRIBED IN DETAIL.
THE DATA PROCESSING SYSTEM HAD FIVE STAGES:
(1) CHRONOLOGICAL LOGGING OF RAW DATA IN
SEPARATE LOG BOOKS; (2) PREPARATION OF EDITED
INPUT DATA SHEETS AND DATA CARDS; (3) COMPUTER
OUTPUT AND HUMAN EDITING OF DATA OUTPUT CARDS;
(4) COMPUTER OUTPUT AND HUMAN EDITING OF
SUMMARY OUTPUT CARDS; (5) COMPUTER OUTPUT AND
FINAL HUMAN INTERPRETATION OF P AND F VALUES FOR
SIGNIFICANCE OF THE RESULTS OBTAINED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-642 665 6/5 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE
A SYSTEM FOR COMPUTER-AIDED DIAGNOSIS. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
SEP 67 256P GORRY, GEORGE ANTHONY I
REPT. NO. MAC-YR-44
CONTRACT: NONR-4102(01)
PROJ: RR-048-189, RR-003-09-G1

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIAGNOSIS, *COMPUTER PROGRAMS),
REAL TIME, TIME SHARING, COMPUTERS,
MODELS(SIMULATIONS), THESES, PROBABILITY,
PATTERN RECOGNITION (U)
IDENTIFIERS: ON-LINE SYSTEMS (U)

THE THESIS DESCRIBES A MODEL DIAGNOSTIC PROBLEM AND A COMPUTER PROGRAM DESIGNED TO DEAL WITH THIS PROBLEM. THE MODEL DIAGNOSTIC PROBLEM IS AN ABSTRACT PROBLEM. A MAJOR CONTENTION OF THIS THESIS, HOWEVER, IS THAT THIS PROBLEM SUBSUMES THE PRINCIPAL FEATURES OF A NUMBER OF OSTENSIBLY DIFFERENT REAL DIAGNOSTIC PROBLEMS INCLUDING CERTAIN PROBLEMS OF MEDICAL DIAGNOSIS AND THE DIAGNOSIS OF MACHINE FAILURES. A SECOND MAJOR CONTENTION OF THIS THESIS IS THAT STRATEGIES FOR THE SOLUTION OF THE MODEL DIAGNOSTIC PROBLEM CAN BE FORMULATED IN TERMS SUFFICIENTLY EXPLICIT TO PERMIT THEIR INCORPORATION IN A COMPUTER PROGRAM. THE DIAGNOSTIC PROGRAM WAS IMPLEMENTED ON THE TIME-SHARING SYSTEM AT PROJECT MAC. IT WAS APPLIED TO TWO MEDICAL PROBLEMS, THE DIAGNOSIS OF CONGENITAL HEART DISEASE, AND THE DIAGNOSIS OF PRIMARY BONE TUMORS. THE RESULTS OBTAINED HERE SUGGEST (1) THAT A COMPUTER PROGRAM CAN BE OF CONSIDERABLE VALUE AS A DIAGNOSTIC TOOL, AND (2) THAT IT IS QUITE ADVANTAGEOUS FOR SUCH A PROGRAM TO PERFORM SEQUENTIAL DIAGNOSIS AS IT INTERACTS WITH THE USER. (U)
(AUTHOR)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-242 767 7/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
ANALOG COMPUTER FOR PERFORMING CONFORMAL
TRANSFORMATIONS,
JUL 67 8P SUPRUN, A. M. I
REPT. NO. FTD-HT-23-832-67

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF
PATENT (USSR) 155 624, 25 AUG 62 2P.

DESCRIPTORS: (ANALOG COMPUTERS, *CONFORMAL
MAPPING), INPUT-OUTPUT DEVICES, CURVE FITTING,
OSCILLOGRAPHS, POLYNOMIALS,
TRANSFORMATIONS (MATHEMATICS), USSR

(U)

A COMPUTER IS SUGGESTED WHICH WOULD REPRODUCE THE
BOUNDARIES OF SINGLY- OR DOUBLY-CONNECTED REGIONS ON
THE SCREEN OF A CRT. THE DISTINGUISHING
CHARACTERISTIC OF THE CIRCUIT IS THE MEANS OF FORMING
THE VOLTAGES (FOR THE DEFLECTING PLATES OF THE
TUBE) CORRESPONDING TO THE COORDINATES OF THE
FUNCTION AND FORMED BY SUMMATION OF SINUSOIDAL
VOLTAGES, FOR SYNCHRONIZATION OF THE VOLTAGE
FREQUENCIES. THE SUMMED SINUSOIDS ARE FORMED WITH THE
AID OF FILTERS AND AMPLIFIERS WHOSE INPUTS RECEIVE
THE OUTPUT VOLTAGE FROM A COMMON GENERATOR OF
PERIODIC COMPLEX-FORM VOLTAGES.

(U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-634 209 6/12 6/19
NAVAL AEROSPACE MEDICAL INST PENSACOLA FLA
TWO DEVICES FOR ANALYSIS OF NYSTAGMUS, (U)
OCT 67 26P GUEDRY, FRED E., JR.
TURNIPSEED, GENE T. I
REPT. NO. NA41-1021
CONTRACT: NASA ORDER-R-93
PROJ: MR005.04-0021.153

UNCLASSIFIED REPORT

DESCRIPTORS: (NYSTAGMUS, ANALYSIS),
AUTOMATIC, ELECTRONIC RECORDING SYSTEMS, DATA
PROCESSING SYSTEMS, DIGITAL SYSTEMS, ANALOG
SYSTEMS, DISPLAY SYSTEMS (U)
IDENTIFIERS: ELECTRONYSTAGHOGRAPHY (U)

TWO DEVICES ARE DESCRIBED WHICH FACILITATE MEASUREMENT AND ANALYSIS OF NYSTAGMUS. ONE DEVICE REQUIRES MANUAL ALIGNMENT OF A CROSSHAIR WITH THE NYSTAGMUS SLOPE. THIS PROCESS IS MUCH FASTER THAN UNAIDED MANUAL SCORING BECAUSE (1) THE MECHANICAL AID IN SLOPE MEASUREMENT IS VERY EFFECTIVE, (2) TIME MEASUREMENT IS VIRTUALLY AUTOMATIC, AND (3) ALL STEPS AFTER THE CROSSHAIR ALIGNMENT, INCLUDING TABULATION OF DIGITAL INFORMATION AND PLOTTING OF ANALOG INFORMATION, ARE ACCOMPLISHED AUTOMATICALLY. THE SECOND DEVICE IS A STANDARD RECORDER WITH PLUG-IN UNITS FOR AREA-SUMMATION AND TIMED SWITCHING. IT IS LESS VERSATILE THAN THE FIRST DEVICE, AND IS NOT EQUIVALENT TO ADVANCED ELECTRONIC COMPUTATION, BUT IT DOES PROVIDE AN IMMEDIATE ANALOG DISPLAY AND (WITH A DIGITAL VOLTMETER-PRINTER) AN IMMEDIATE DIGITAL DISPLAY OF ANALYZED NYSTAGMUS. ADDITIONAL OPERATIONS PERFORMED ON THE OUTPUT OF THESE DEVICES CAN PROVIDE ESTIMATES OF THE π/Δ TIME CONSTANT AND OTHER PARAMETERS. TOPICS DISCUSSED INCLUDE SOURCES OF ERROR IN RAPID PROCESSING OF NYSTAGMUS AND ADVANTAGES OF RAPID PROCESSING FOR EXPERIMENTAL PURPOSES, FOR PILOT EVALUATION, AND FOR CLINICAL APPLICATION. (AUTHOR) (U)

UNCLASSIFIED

DCC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AG-466 379 6/19 14/2
NAVAL AEROSPACE MEDICAL INST PENSACOLA FLA
INSTRUMENTATION FOR THE CORIOLIS ACCELERATION
PLATFORM.

(U)

DESCRIPTIVE NOTE: JOINT REPT.,

NOV 67 28P HIXSON, W. CARROLL :

REPT. NO. KAM1-1022

CONTRACT: NASA ORDER-R-93

PROJ: NAVMED-HR005.04-0021

TASK: HR005.04-0021-154

UNCLASSIFIED REPORT

DESCRIPTORS: (ACCELERATION TOLERANCE, TEST
EQUIPMENT), SPACE MEDICINE, INSTRUMENTATION,
ACCELERATION, VESTIBULAR APPARATUS, TRANSDUCERS,
DISPLAY SYSTEMS, DATA PROCESSING SYSTEMS, SLIP
RINGS, CONTROL PANELS, CIRCUITS, ACOUSTIC
EQUIPMENT

(U)

IDENTIFIERS: *BIOINSTRUMENTATION, *CORIOLIS
ACCELERATION PLATFORM

(U)

THE REPORT DESCRIBES A GENERAL-PURPOSE
INSTRUMENTATION SYSTEM DEVELOPED FOR USE IN
CONJUNCTION WITH THE CORIOLIS ACCELERATION
PLATFORM. A COMBINED LINEAR AND ANGULAR MOTION
DEVICE RECENTLY INSTALLED AT THE VESTIBULAR RESEARCH
FACILITIES OF THIS ACTIVITY. THE SYSTEM, BASED ON
THE USE OF STANDARD COMMERCIALY AVAILABLE EQUIPMENT,
PROVIDES THE BASIC TRANSDUCERS, SIGNAL-CONDITIONING
CIRCUITRY, AND RECORDING INSTRUMENTS REQUIRED FOR THE
ACQUISITION, DISPLAY, AND STORAGE OF A WIDE VARIETY
OF COMMONLY COLLECTED BIOLOGICAL AND BIOENVIRONMENTAL
MEASUREMENT DATA. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000391

AD-668 201 6/5
NAVAL HOSPITAL PHILADELPHIA PA
EVALUATION OF STANDARD ECG LEADS FOR MASS
SCANNING,
APR 68 2P SCHNEIDER, PAUL J. I
BIRCH, ALEXANDER A. , JR I

(U)

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION, V204 P149-50 APR
1968.

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, *PUBLIC
HEALTH), ACCURACY, MEDICAL EXAMINATION,
CARDIOVASCULAR DISEASES, DIAGNOSIS, COMPUTERS,
STATISTICAL ANALYSIS

(U)

THE ACCURACY IN ANALYSIS OF THE SIX STANDARD
ELECTROCARDIOGRAPHIC LEADS FOR MASS SCREENING WAS
EVALUATED FROM 2,000 RANDOMLY SELECTED TRACINGS.
THE ECGS WERE INTERPRETED AS NORMAL OR ABNORMAL
BY GENERALLY ACCEPTED CRITERIA WITHOUT BENEFIT OF
CLINICAL HISTORY. COMPARISON WITH THE FULL 12-LEAD
ECG WAS MADE. TWELVE HUNDRED AND SIXTEEN
(60.8%) WERE NORMAL AND 730 (36.88%) WERE
ABNORMAL. TWENTY-SIX (3.44%) FALSE-NEGATIVE
AND 28 (2.25%) FALSE-POSITIVE RESULTS OCCURRED.
THE SENSITIVITY AND SPECIFICITY OF THE METHOD WERE
96.56% AND 97.75%, RESPECTIVELY. THE USE OF
THE STANDARD ECG LEADS FOR MASS SCREENING IS
FEASIBLE FOR THE FOLLOWING REASONS: (1) IT IS A
RAPID TECHNIQUE NECESSITATING NO CHANGE IN PATTERN OR
VECTOR APPROACHES TO INTERPRETATION. (2) THE
PATIENT NEED NOT BE RECUMBENT OR UNDRESSED. (3)
THE ACCURACY COMPARES FAVORABLY WITH THAT OF 12-
LEAD ANALYSIS. (4) THE METHOD IS READILY
ADAPTABLE TO COMPUTER INTERPRETATION. (AUTHOR)

(U)

COMPUTER PROCESSING OF DIGITAL DATA

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-218 859

MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF
ELECTRONICS

PROCESSING NEUROELECTRIC DATA

(U)

JUL 59 14 SIEBERT, WILLIAM M. I

REPT. NO. TR251

CONTRACT: DA36 0395C78108

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROENCEPHALOGRAPHY, *MATHEMATICAL
COMPUTER DATA, COMPUTERS, DATA PROCESSING SYSTEMS,
MATHEMATICAL ANALYSIS, NEUROLOGY, PROBABILITY,
PSYCHIATRY

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-256 354

YALE UNIV NEW HAVEN CONN

NEUROLOGICAL MECHANISMS IN EPILEPSY AND BEHAVIOR (U)

APR 61 IV DELGADO, JOSE M.R. I

CONTRACT: NONR60908

UNCLASSIFIED REPORT

DESCRIPTORS: •EPILEPSY, •NEUROLOGY, •TRANQUILIZERS, BEHAVIOR, BRAIN, CANNULATION, CARDIOVASCULAR SYSTEM, CEREBRAL CORTEX, DIGITAL COMPUTERS, DRUGS, ELECTRODES, ELECTROENCEPHALOGRAPHY, EMOTIONS, PHYSIOLOGY, PRIMATES, STIMULATION, STOMACH (U)

METHODS FOR REMOTE CONTROLLED STIMULATION OF THE BRAIN DESCRIBED IN THE LITERATURE ARE UNRELIABLE, MAINLY BECAUSE INTENSITY OF STIMULATION CHANGES IF THE ORIENTATION OF THE RECEIVING ANTENNA IS MODIFIED BY ANIMAL MOVEMENTS. ALSO, THE MONITORING OF STIMULATION IS OFTEN DIFFICULT. THESE PROBLEMS, AS WELL AS OTHERS, SEEM TO BE SOLVED BY A NEW METHOD FOR RADIO-CONTROLLED ELECTRICAL STIMULATION OF THE BRAIN. A STUDY WAS BEGUN OF CEREBRAL-GASTROINTESTINAL CORRELATIONS. IN A GROUP OF SEVEN MONKEYS, CANNULAS WERE PERMANENTLY IMPLANTED IN THE STOMACH, AND MULTILEAD ELECTRODES PERMANENTLY IMPLANTED IN THE BRAIN. SOME OF THE CONTROL STUDIES, AS WELL AS THE REACTIONS AFTER HISTAMINE INJECTION SEEMED TO INDICATE THAT GASTROINTESTINAL FUNCTIONS IN THE MACACA MULATTA ARE SIMILAR TO THOSE IN HUMAN BEINGS, AND DIFFERENT FROM THOSE IN OTHER EXPERIMENTAL ANIMALS, SUCH AS CATS AND DOGS. THE STUDY OF AMINOPHENYLPYRIDONE WAS CONTINUED WITH A DERIVATIVE NAMED CARBOMETHOXY-AMINOPHENYLPYRIDONE, WHICH PRODUCES INT RESTING BEHAVIORAL DISASSOCIATION WITH SIMULTANEOUS DROWSINESS AND INCREASED AGGRESSIVENESS. CONSIDERABLE MODIFICATION OF THE ELECTRICAL ACTIVITY OF THE BRAIN WAS RECORDED OVER A WIDE AREA OF THE CEREBRAL CORTEX, WHILE THE ACTIVITY WAS ONLY SLIGHTLY MODIFIED IN SOME OF THE LIMBIC STRUCTURES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-259 526

PRINCETON UNIV N J DEPT OF PSYCHOLOGY

HUMAN MEMORY. A PARTIAL MODEL AND ITS IMPLICATIONS
FOR RETROACTIVE PHENOMENA

(U)

MAY 61 IV ROSS, JOHN I

CONTRACT: NONR-1858(15)

PROJ: NR-150-028

UNCLASSIFIED REPORT

DESCRIPTORS: •BEHAVIOR, •MATHEMATICAL PREDICTION,
•MEMORY, •PSYCHOLOGY, COMPUTERS, CONDITIONED REFLEX,
ERRORS, LEARNING, PSYCHIATRY, PSYCHOSES, SPEECH,
STIMULATION, THEORY, TRAINING, VISION

(U)

AFTER A CONSIDERATION OF EXPERIMENTAL AND OTHER EVIDENCE, ABOUT THE FUNCTIONING OF HUMAN MEMORY, FOUR FEATURES WERE SELECTED AS MOST SALIENT, AND A MODEL PROPOSED TO ACCOUNT FOR THEM. THE MODEL IS BASED UPON CERTAIN CONCEPTS BORROWED FROM THE COMPUTER FIELD AND A CONSIDERATION OF INFORMATION TRANSMISSION AND STORAGE. IT IS MEANT TO MAKE PSYCHOLOGICAL SENSE AND, AT THE SAME TIME, TO BE REALIZABLE IN A COMPUTER FOR A STUDY OF ITS PROPERTIES. THE MODEL LED TO DEDUCTIONS ABOUT PHENOMENA OF RETROACTION, AND FOUR EXPERIMENTS WERE CONDUCTED TO TEST THE DEDUCTIONS. THE FIRST EXPERIMENT INVOLVED COLORED GEOMETRICAL FORMS AND STUDIED THE DIFFERENTIAL EFFECTS OF INTERPOLATED CONDITIONS OF LOW AND HIGH CORRELATION BETWEEN COLOR AND FORM. THE SECOND EXPERIMENT STUDIED THE DIFFERENTIAL EFFECTS OF VARIATION IN A STRUCTURE OF LINKAGES BETWEEN FIGURES AND NAMES ON THE RECALL OF AN AMBIGUOUSLY STRUCTURED SIMILAR SITUATION. THE THIRD EXPERIMENT STUDIED THE TYPES OF ERRORS CAUSED IN THE RECALL OF A LIST OF WORD PAIRED ASSOCIATES BY TWO LISTS VARYING IN THE MEANINGFULNESS OF THE STIMULUS-RESPONSE PAIRINGS. THE FOURTH EXPERIMENT STUDIED THE EFFECTS OF TRAINING PROCEDURES ON THE RECALL OF DOUBLY STRUCTURED NUMBER MATRICES, AND THE DIFFERENTIAL EFFECTS OF INTERPOLATED TASKS, DEPENDING UPON TRAINING PROCEDURES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-283 793

WALTER REED ARMY INST OF RESEARCH WASHINGTON D C
THE NATURAL HISTORY OF VENTRICULAR SEPTAL DEFECT (U)
JUN 62 IV WALKER, WELDON J. HALL, ROBERT J.
REPT. NO. MEDDH 283

UNCLASSIFIED REPORT

DESCRIPTORS: •DISEASES, •HEART, •STATISTICAL
ANALYSIS, DATA PROCESSING SYSTEMS, DIAGNOSIS,
HOSPITALS, MEDICAL EXAMINATION, MILITARY MEDICINE (U)

RESEARCH TEACHING HOSPITALS ARE POOLING THEIR
MATERIAL TO CARRY OUT A COMPREHENSIVE FOLLOW-UP STUDY
ON ALL CASES OF INTERVENTRICULAR SEPTAL DEFECT IN
THEIR FILES PROVEN BY CARDIAC CATHETERIZATION PRIOR
TO 1 JANUARY, 1960. THE FOLLOW-UP INCLUDES:
PRESENT STATUS OF HEALTH, THE NUMBER WHO HAVE DIED
FROM THEIR DISEASE AND THE AUTOPSY FINDINGS (WHERE
AVAILABLE), THE NUMBER WHO HAVE HAD SURGICAL
CORRECTION, THE NUMBER WHO HAVE DIED INCIDENT TO
SURGERY, A DETERMINATION AS TO WHETHER ANY HAVE
UNDERGONE SPONTANEOUS CLOSURE OF THEIR DEFECT, HEIGHT
AND WEIGHT FOR PLOTTING GROWTH CURVES, A
DETERMINATION OF CYANOSIS ETC. IT IS FELT THAT
COMPILING THIS INFORMATION WILL ADD TO PRESENT
KNOWLEDGE CONCERNING THE NATURAL COURSE OF THIS
CONGENITAL DEFECT. THE CARDIOVASCULAR RESEARCH
SECRETARY AT THE WALTER REED GENERAL
HOSPITAL WILL COORDINATE TRACING THESE PATIENTS
THROUGH MILITARY LOCATOR FACILITIES, FOLLOW-UP
CONTACTS, CALLS AND CORRESPONDENCE, AND COMPILE THE
OVER-ALL DATA. (AUTHOR (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-284 942

ARMY MEDICAL RESEARCH AND NUTRITION LAB DENVER COLO
ANNUAL PROGRESS REPT. FOR 1 JUL' 61-30 JUNE 62 ON
INTERNAL MEDICINE AND BASIC RESEARCH IN LIFE
SCIENCES.

(U)

JUN 62 IV KUHN, L.R.; MORSE, W.C. I

REPT. NO. MEDDH 288

PROJ: 6X60-01-001, 6X99-26-001

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL RESEARCH, *METABOLISM,
*MILITARY MEDICINE, *NUTRITION, ALGAE, AMINO ACIDS,
BIOLOGY, CALCIUM, CARBOHYDRATES, DATA PROCESSING
SYSTEMS, DIET, ENZYMES, EXERCISE, GLYCINES, IODINE,
ISONIAZID, KIDNEYS, LIPIDS, LUNGS, METALS, MIXTURES,
MYCOBACTERIUM TUBERCULOSIS, OXYGEN CONSUMPTION,
PATHOLOGY, STEROIDS, VITAMIN B COMPLEX, VITAMINS (U)

ANNUAL PROGRESS REPORT FROM ARMY MEDICAL RESEARCH AND
NUTRITION LAB, INTERNAL MEDICINE AND BASIC RESEARCH IN
LIFE SCIENCES, CARDIOPULMONARY-RENAL DISEASE, METABOLISM
AND NUTRITION, PHARMACOLOGY OF THE COMBAT
SOLDIER, BIOCHEMISTRY, AND PHYSIOLOGY.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-402 461

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
A DIGITAL READOUT TECHNIC APPLICABLE TO LABORATORY
AND AEROSPACE MEDICAL MONITORING OF PHYSIOLOGIC
DATA. (U)

FEB 63 14P

TASK: 793002

MONITOR: SAH TDR62139

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL EQUIPMENT, *SPACE MEDICINE,
*MONITORS, RESPIRATION, BLOOD PRESSURE, HEART,
BLOOD VOLUME, TELEMETRY SYSTEMS, DIGITAL COMPUTERS,
INSTRUMENTATION. (U)
IDENTIFIERS: AEROSPACE MEDICAL MONITORING. (U)

THIS REPORT DESCRIBES A TECHNIC FOR DIGITAL READOUT OF SYSTOLIC AND DIASTOLIC BLOOD PRESSURE, HEART RATE, AND RESPIRATORY MINUTE VOLUME, APPLICABLE TO WIRE TELEMETRY IN THE LABORATORY AS WELL AS WIRELESS TELEMETRY FROM AEROSPACE VEHICLES. GENERAL DESCRIPTION OF THE TECHNIC AND SPECIFIC CONSTRUCTION DETAILS ARE GIVEN. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-411 494

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
CYBERNETICS IN THE CLINIC.

(U)

JUN 63 3P MISYUK, N. I

MONITOR: FTD TT62 522

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM MEDITSINSKAYA GAZETA,
P. 3, 22 FEB 63.

DESCRIPTORS: (•CYBERNETICS, SCIENTIFIC
RESEARCH), (•BRAIN, MODEL (SIMULATIONS),
(•BIONICS, CYBERNETICS), (•COMPUTERS,
DIAGNOSIS), NEOPLASMS, PATHOLOGY, DIAGNOSIS,
NEUROLOGY, MEDICAL EQUIPMENT.

(U)

IDENTIFIERS: 1963, USSR, URAL-1.

(U)

CYBERNETICS IN THE CLINIC; URAL-1 COMPUTER USED TO
DIAGNOSE DISEASES OF THE NERVOUS SYSTEM; TRANSLATION OF
RUSSIAN NEWSPAPER ARTICLE.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-924 606

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
BULLETIN OF EXPERIMENTAL BIOLOGY AND MEDICINE. (U)

NOV 63 29F

MONITOR: FTD TT63 1012

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM BYULLETEN'
EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 4:8, PP. 11-
12, 28-37, AND 116-120, 1963.

DESCRIPTORS: (*TASTE, SENSITIVITY), (*MOTION
SICKNESS, PHYSIOLOG.), (*COMPUTERS, MEDICINE),
(*ACCELERATION TOLERANCES, TIME), (*ROTATION,
PHYSIOLOGY), OXYGEN, RESPIRATION (U)
IDENTIFIERS: 1963, CORIOLIS ACCELERATIONS (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000300

AD-425 429

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
COMPUTER APPLICATIONS IN MEDICINE AND THE BIOLOGICAL
SCIENCES BIBLIOGRAPHY - II,

(U)

OCT 62 34P EMPEY, SALLY L. :

REPT. NO. SP1025 001 00

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPUTERS, MEDICINE), (*MEDICINE,
COMPUTERS), (*BIBLIOGRAPHIES, COMPUTERS), BIOLOGY,
DIGITAL COMPUTERS, MEDICAL RESEARCH, DATA PROCESSING
SYSTEMS, AUTOMATION, PROGRAMMING (COMPUTERS)

(U)

IDENTIFIERS: APPLICATIONS, 1962

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-424 816

RC. SERVICE CO CAMDEN N J

TECHNIQUES OF PHYSIOLOGICAL MONITORING. VOLUME II.
COMPONENTS.

NOV 63

IV

ALNUTT, RICHARD I

(U)

WEINBERG, PHILIP T.; BARBIERE, ED. BY ROBERT E. I

CONTRACT: AF33 657 9292

PROJ: 7222

TASK: 722203

MONITOR: AMRL

TDR62 98, VOL. 2.

UNCLASSIFIED REPORT

DESCRIPTORS: (*MONITORS, PHYSIOLOGY), (*SPACE
FLIGHT, MONITORS), DATA PROCESSING SYSTEM,
THEORY, ELECTRONIC EQUIPMENT, TRANSDUCERS,
ELECTRODES, AMPLIFIERS, RECORDING SYSTEMS,
OSCILLOSCOPES, AMPLIFIERS, MULTIPLEX, MODULA
TION, DIGITAL COMPUTERS, ANALOG COMPUTERS,
DISPLAY SYSTEMS, MAGNETIC TAPE, ANALYSIS,
DATA, MAGNETIC CORES, PUNCHED CARDS,
FREQUENCY MODULATION, FREQUENCY CONVERTERS,
TELEMETERING TRANSMITTERS, PULSE GENERATORS,
DIFFERENTIATING CIRCUITS, GALVANIC SKIN
RESPONSE, INTEGRATED CIRCUITS, TRIGGER CIRCUITS,
CATHODE RAY TUBE SCREENS.

(U)

IDENTIFIERS: MULTIPLEXING, SIGNAL MODIFIERS,
1963.

(U)

THIS VOLUME SURVEYS THE COMPONENTS USED IN
PHYSIOLOGICAL MONITORING SYSTEMS, PRIMARILY THOSE
SUITABLE FOR AEROSPACE APPLICATIONS. DISCUSSION
INCLUDES PERFORMANCE CHARACTERISTICS AND
CAPABILITIES, PLUS SOME BACKGROUND THEORY, ON BASIC
COMPONENTS SUCH AS ELECTRODES AND TRANSDUCERS,
SIGNAL MODIFIERS, AND GRAPHIC RECORDING AND DISPLAY
DEVICES; THE USE OF MAGNETIC TAPE RECORDERS IN
INSTRUMENTATION IS DESCRIBED. WIRE AND RADIO
TRANSMISSION EQUIPMENT IS DISCUSSED, PLUS VARIOUS
SCHEMES OF MODULATION AND MULTIPLEXING. THE
CAPABILITIES OF DIGITAL AND ANALOG COMPUTERS AND
OTHER DATA PROCESSING EQUIPMENT ARE DESCRIBED, AND
THE ANALYSIS OF PHYSIOLOGICAL DATA WITH SUCH
EQUIPMENT IS BRIEFLY DISCUSSED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-428 600

SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
METHODS OF THE MANUAL ANALYSIS OF MULTISOURCE,
CONTINUOUSLY RECORDED BIOMEDICAL DATA,

JUN 63 100P NANCE, J. WILSON ;

REPT. NO. TM1210 000 01

CONTRACT: AF19 628 1648

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MEDICINE, ANALYSIS), (*DIGITAL
COMPUTERS, DIAGNOSIS), FEASIBILITY STUDIES, TEST
METHODS, COMPUTER LOGIC, ELECTROCARDIOGRAPHY,
BALLISTOCARDIOGRAPHY, ELECTROENCEPHALOGRAPHY, GALVANIC
SKIN RESPONSE, MEASUREMENT, PHYSIOLOGY, TABLES,
PATHOLOGY

(U)

IDENTIFIERS: PHONOCARDIOGRAPH, ELECTRO-OCULOGRAPH,
PNEUMOGRAPH, 1962, DIAGNOSTICIAN

(U)

THIS DOCUMENT IS THE FIRST IN A SERIES THAT ATTEMPS
TO DETERMINE THE FEASIBILITY OF APPLYING ELECTRONIC
DIGITAL COMPUTERS TO THE SCREENING AND ANALYSIS OF
BIOMEDICAL DATA BY EXAMINING AS CLOSELY AS POSSIBLE
THE ANALYTIC LOGIC EMPLOYED BY THE CLINICAL
DIAGNOSTICIAN. IN MANY CASES IT HAS BEEN NECESSARY
TO AVOID SPECIFIC VALUES, LIMITS, AND MAGNITUDES
SINCE THESE FACTORS ARE DETERMINED ENTIRELY BY THE
EQUIPMENT USED BY THE INVESTIGATOR AS WELL AS THE
METHOD EMPLOYED IN THE USE OF THE EQUIPMENT.
SPECIFIC NORMALS NEEDED FOR THE PREPARATION AND
OPERATION OF PROGRAMS WOULD HAVE TO BE DETERMINED FOR
THE SPECIFIC CASE AT HAND. THE FOLLOWING
CLASSIFICATIONS OF PHYSIOLOGICAL MEASUREMENT AND
THEIR RELATED MANUAL ANALYSIS METHODS INCLUDED IN
THIS REPORT ARE: ELECTROCARDIOGRAPH,
BALLISTOCARDIOGRAPH, PHONOCARDIOGRAPH,
ELECTROENCEPHALOGRAPH, ELECTRO-OCULOGRAPH,
PNEUMOGRAPH, AND GALVANIC SKIN RESPONSE. THE REPORT
STATES THAT THE PREPARATION OF SUITABLE COMPUTER
PROGRAMS TO AID THE CLINICAL DIAGNOSTICIAN REQUIRES A
BASIC KNOWLEDGE OF THE METHODS USED IN THE ANALYSIS
OF BIOMEDICAL DATA. IT CONDENSES THE AVAILABLE
INFORMATION ON THE ANALYSIS METHODS AND TECHNIQUES
AND PROVIDES THE PROGRAMMER WITH AN OUTLINE OF THE
MANUAL METHODS UTILIZED SO THAT HE MAY ATTEMPT
FURTHER FEASIBILITY STUDIES ON THE USE OF THE
COMPUTER IN THE SCREENING AND ANALYSIS OF BIOMEDICAL
DATA. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-930 944

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
PROBLEMS OF CYBERNETICS IN MEDICINE, (U)

DEC 62 29P VOSKRESENSKIY, A. D. ;

PROKHOROV, A. I. ;

MONITOR: FTD TT63 521

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM KIBERNETIKU NA
SLUZHBU KOMMUNIZMU, SBORNIK STATEY GOSENERGOIZDAT,
MOSKVA-LENINGRAD, VOL. 1, PP. 126-140, 1961.

DESCRIPTORS: (CYBERNETICS, MEDICAL RESEARCH),
PHYSIOLOGY, CONTROL SYSTEMS, DYNAMICS, THEORY,
CARDIOVASCULAR SYSTEM, INSTRUMENTATION, COMPUTERS,
DATA STORAGE SYSTEMS (U)

IDENTIFIERS: DIAGNOSTIC MACHINES, 1961 (U)

TRANSLATION OF FOREIGN RESEARCH ON PROBLEMS OF CYBERNETICS
IN MEDICINE.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-471 880

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
MONITORING PSYCHOMOTOR RESPONSE TO STRESS BY EVOKED
AUDITORY RESPONSES, (U)

MAY 65 11P FREEMAN, J. A. I

REPT. NO. SAM-TR-65-22

TASK: 793003

UNCLASSIFIED REPORT

DESCRIPTORS: (*CENTRAL NERVOUS SYSTEM,
MONITORS), (*PSYCHOMOTOR TESTS, AVIATION
MEDICINE), (*PILOTS, PSYCHOMOTOR TESTS),
ELECTROENCEPHALOGRAPHY, STRESS(PHYSIOLOGY),
PERFORMANCE(HUMAN), HYPOXIA, ACCELERATION,
SOUND SIGNALS, AUDITORY SIGNALS,
REACTION(PSYCHOLOGY), DIGITAL SYSTEMS, DATA
STORAGE SYSTEMS, DIGITAL COMPUTERS,
PERFORMANCE(ENGINEERING) (U)

IDENTIFIERS: BIOSENSORS (U)

A SENSITIVE CENTRAL NERVOUS SYSTEM (CNS)
MONITORING TECHNIC THAT CAN BE CORRELATED WITH
BEHAVIOR AND WITH CHANGES IN THE SURROUNDING
ENVIRONMENT DURING AEROSPACE FLIGHT IS DESIRABLE TO
THE FLIGHT SURGEON INTERESTED IN THE EARLY DETECTION
OF POSSIBLE ADVERSE EFFECTS OF THE FLIGHT ON THE
SUBJECT, TO THE NEUROPHYSIOLOGIST CONCERNED WITH
BASIC CEREBRAL MECHANISMS OCCURRING DURING THE UNIQUE
CONDITIONS OF SPACE FLIGHT, AND TO THE SYSTEMS
ENGINEER INTERESTED IN ANY REDUNDANT INDIRECT
MEASUREMENT OF ENVIRONMENTAL PARAMETERS WHICH SERVE
TO ENHANCE THE TOTAL SYSTEM RELIABILITY. IN THIS
STUDY, A SPECIAL-PURPOSE DIGITAL COMPUTER WAS USED TO
OBTAIN AVERAGE EEG RESPONSES EVOKED FROM HUMAN
SUBJECTS BY REPETITIVE, NONDISTRACTING CLICKS DURING
SEDENTARY ACTIVITY, MILDLY SYMPTOMATIC
HYPERVENTILATION, HYPOXIA, AND 2.5 +G ACCELERATION
ON THE SAM HUMAN CENTRIFUGE AND IN AN NF-100
AIRCRAFT. THE WAVEFORMS OBTAINED WERE
QUALITATIVELY DISTINCT FOR EACH GROUP. NO
APPRECIABLE ALTERATION OF THE RELATIVE AMPLITUDES OR
LATENCIES OF THE INDIVIDUAL RESPONSE COMPONENTS WAS
CAUSED BY DISTRACTION, HABITUATION, OR VARIATIONS IN
AMBIENT NOISE. NO SIGNIFICANT EFFECTS WERE
DETECTABLE IN THE CORRESPONDING EEG'S. THIS
PRELIMINARY INVESTIGATION SUGGESTS THAT AVERAGE
EVOKED RESPONSES MAY BE USEFUL AND SENSITIVE
INDICATORS OF CNS ACTIVITY DURING AEROSPACE FLIGHT.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-600 903

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
A CONSULTATION WITH THE URAL 2.

MAR 64 6P AKKURATOVA, T. I
MONITOR: FTD JTT TT64 175, 64-11723

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. FROM
TRUD MOSCOW (USSR) 1963, 24 MAR. P. 4.

DESCRIPTORS: (*DIAGNOSIS, COMPUTERS), (*CYBERNETICS,
DIAGNOSIS), MEDICINE, PUNCHED CARDS, USSR (U)

MEDICAL DIAGNOSIS USING THE URAL-2 COMPUTER.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-601 801

MISSOURI UNIV KANSAS CITY SCHOOL OF DENTISTRY

EVALUATION OF CLINICAL PROCEDURES IN DENTISTRY. (U)

DESCRIPTIVE NOTE: ANNUAL PROGRESS REPORT, 1 JAN-31 MAY 64.

JUN 64 18P ROBINSON, HAMILTON B. G. :

STEWART, JACK L. :

CONTRACT: DA49 197MD2361

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (DENTISTRY, MEDICAL RESEARCH), (TIME STUDIES), DENTAL PERSONNEL, MEDICAL EXAMINATION, TEETH, ULTRASONIC RADIATION, EFFECTIVENESS, COMPUTERS, RECORDING SYSTEMS, RECORDS, X-RAY PHOTOGRAPHY, RADIOGRAPHY, AUTOMATION, INFRARED RADIATION, DATA STORAGE SYSTEMS, READING MACHINES (U)

IDENTIFIERS: IBM 1231 (U)

PROGRESS ON A COMPARATIVE STUDY BETWEEN THE USE OF CONVENTIONAL DENTAL PROCEDURES AND NEWER OR MODIFIED TECHNIQUES IS REPORTED. THE AIM OF THIS PROJECT IS TO DETERMINE THE MOST EFFECTIVE UTILIZATION OF THE ARMY'S DENTAL MANPOWER. DATA COLLECTED ON THE RELATIVE VALUE OF ULTRASONICS AND THE CONVENTIONAL METHOD FOR SCALING TEETH IS BEING ANALYZED BY COMPUTERS TO ESTABLISH THE EFFECTIVENESS AS A FUNCTION OF TIME. PRELIMINARY DATA ON A STUDY USING DICTATING AND TRANSCRIBING EQUIPMENT FOR CLINICAL EXAMINATION CHARTING SHOWS THAT THE PRESENT METHODS USED BY THE ARMY ARE FASTER. THE USE OF THE PANORAMIC RADIOGRAPHIC METHOD FOR X-RAY EXAMINATION SHOWS AN 87% SAVING OF TIME.

EXPERIMENTS ARE BEING CONDUCTED WITH VARIOUS FORMS OF RADIANT ENERGY AS A MEANS OF HEATING DENTAL ALLOYS. AN EXAMINATION AND TREATMENT CHART WAS DESIGNED FOR AUTOMATION OF THE ORAL HEALTH RECORDS. THIS IS AN 8 BY 11 INCH MARK SENSE SOURCE DOCUMENT TO BE USED WITH THE 1231 (IBM) OPTICAL MARK PAGE READER. FURTHER DEVELOPMENT OF THIS CHART WHICH WAS FOUND NECESSARY IS IN PROGRESS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000397

AD-602 649

AND CORP SANTA MONICA CALIF

ON THE CONSTRUCTION OF A SIMULATION OF THE INITIAL
PSYCHIATRIC INTERVIEW. (U)

JUL 64 57P BELLMAN, RICHARD (FRIEND, M. B.

SKURLAND, LEONARD)

CONTRACT: PHS 6M09608 D3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PSYCHIATRY, PROGRAMMING (COMPUTERS)),
(DYNAMIC PROGRAMMING, PSYCHIATRY), SIMULATION,
DIGITAL COMPUTERS, EDUCATION, ATTITUDES, VERBAL
BEHAVIOR, DECISION MAKING, REACTION (PSYCHOLOGY),
COMMUNICATION THEORY, DIAGNOSIS, MEDICAL PERSONNEL,
MEDICAL EXAMINATION (U)

THE CONSTRUCTION OF A SIMULATION OF AN INITIAL
PSYCHIATRIC INTERVIEW, WHICH CAN BE REGARDED AS AN
EXAMPLE OF AN ADAPTIVE, MULTISTAGE DECISION PROCESS
IS DESCRIBED IN ORDER TO AUGMENT CURRENT METHODS OF
TEACHING PSYCHIATRIC INTERVIEWING AND TO PROVIDE AN
ADDITIONAL TOOL FOR EXPLORING BASIC PROBLEMS OF TWO-
PERSON COMMUNICATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-602 976

RAND CORP SANTA MONICA CALIF
CONSTRUCTION OF A SIMULATION PROCESS FOR INITIAL
PSYCHIATRIC INTERVIEWING. (U)

JUN 64 14P GILBREATH, N. L. IBELLMAN, R. E. I
FRIEND, M. B. KURLAND, LEONARD I
REPT. NO. 2923
CONTRACT: NIH GM09608 03

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PAPER WAS PRESENTED AT THE ANNUAL
SYMPOSIUM (2ND) IN BIOMATHEMATICS AND COMPUTER
SCIENCES IN THE LIFE SCIENCES, HOUSTON, TEXAS,
MAY 64.

DESCRIPTORS: (PSYCHIATRY, TRAINING DEVICES),
(IONICS, PSYCHIATRY), (MEDICAL EQUIPMENT,
COMPUTERS), (VERBAL BEHAVIOR, DIAGNOSIS), DECISION
MAKING, MEDICAL EXAMINATION, SIMULATION, FEEDBACK,
PROGRAMMING (COMPUTERS) (U)

A DESCRIPTION IS GIVEN OF THE APPLICATION OF A
COMPUTER IN SIMULATING A THERAPIST IN A PATIENT-
THERAPIST RELATIONSHIP DURING INITIAL PSYCHIATRIC
INTERVIEWING. THE USE OF THIS TECHNIQUE IS
SUGGESTED FOR TRAINING PURPOSES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-604 861

DAYTON UNIV OHIO RESEARCH INST
AN AUTOMATIC LOGGING SYSTEM FOR BIOMEDICAL TEST
DATA, (U)

JUN 64 26P HOVEY, WILLIAM J. :

GILMORE, JESSE E. KISSEN, ALBOT T. :

CONTRACT: AF33 657 9521

PROJ: 7164

TASK: 716409

MONITOR: AMRL

TDR64 30

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (DATA PROCESSING SYSTEMS, MEDICAL
RESEARCH), (MEDICAL RESEARCH, DATA PROCESSING
SYSTEMS), DIGITAL COMPUTERS, PROGRAMMING (COMPUTERS),
INSTRUMENTATION, INPUT-OUTPUT DEVICES, CONTROL
SYSTEMS, HEAT TOLERANCE, SPACE MEDICINE (U)
IDENTIFIERS: IBM 7094 (U)

AN AUTOMATIC DATA ACQUISITION SYSTEM WAS DESIGNED
TO MINIMIZE THE DATA REDUCTION OF BIOMEDICAL TEST
DATA. THE OVERALL SYSTEM CONSISTS OF TWO MAIN
PARTS: A HARDWARE GROUP, WHICH DIGITIZES AND RECORDS
THE RAW DATA, AND A COMPUTER PROGRAM, WHICH REDUCES
THE DATA AND PRESENTS IT IN TABULAR FORM FOR READY
ANALYSIS. THE SYSTEM IS CAPABLE OF SIMULTANEOUSLY
RECORDING UP TO 27 THERMOCOUPLE, 27 THERMISTOR, AND
24 MISCELLANEOUS DATA CHANNELS DURING ANY GIVEN
EXPERIMENT. THE SAMPLING SPEED IS SUCH THAT IT
TAKES APPROXIMATELY 6 SECONDS TO RECORD ALL 70
CHANNELS. MAJOR DESIGN CONSIDERATIONS WERE EASE OF
USE, UTILITY, FLEXIBILITY, AND RELIABILITY. ALL
SCALE FACTORS AND CALIBRATIONS, BOTH LINEAR AND
NONLINEAR, WILL BE EFFECTED BY THE COMPUTER PROGRAM.
THE RECORDING HARDWARE ONLY DIGITIZES AND RECORDS
VOLTAGE LEVELS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-606 408

RAND CORP SANTA MONICA CALIF
SYSTEM CONSIDERATIONS IN REGIONAL INFORMATION
EXCHANGE.

(U)

NOV 62 JIP HEARLE, EDWARD F. R. I
REPT. NO. P-2662

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE NEW
ENGLAND CONFERENCE ON COMMUNITY HEALTH RECORDS
MANAGEMENT, BOSTON, MASS., 16 NOV 62.

DESCRIPTORS: (SYMPOSIA, PUBLIC HEALTH), (PUBLIC
HEALTH, DATA PROCESSING SYSTEMS), MEDICAL RESEARCH,
SOCIAL SCIENCES, DATA STORAGE SYSTEMS, INFORMATION
RETRIEVAL, STATISTICAL DATA, INPUT-OUTPUT DEVICES,
SYSTEMS ENGINEERING, POPULATION

(U)

THE WIDESPREAD INTEREST IN IMPROVED SYSTEMS FOR
REGIONAL EXCHANGE OF HEALTH, MEDICAL AND WELFARE
INFORMATION ARISES FOR TWO MAJOR REASONS. FIRST IT
APPEARS THAT SUBSTANTIAL ADVANCES IN BOTH RESEARCH
AND PATIENT CARE MIGHT BE ACHIEVED IF THE VOLUMES OF
VALUABLE DATA BURIED IN FILES OF HEALTH, MEDICAL, AND
WELFARE AGENCIES WERE MORE ACCESSIBLE. SECOND,
ELECTRONIC DEVICES OFFER REAL PROMISE OF MAKING
BETTER ACCESS TO SUCH DATA TECHNOLOGICALLY FEASIBLE.
THIS PAPER EXPANDS ON BOTH OF THESE REASONS AND
EXPLORES SOME OF THE CONSIDERATIONS IN DESIGNING
SYSTEMS FOR REGIONAL INFORMATION EXCHANGE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-609 846

AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD
MASS

APPLICATIONS OF LASERS.

(U)

DESCRIPTIVE NOTE: SPECIAL REPORTS,

NOV 64 43P STICKLEY, C. MARTIN I

PROJ: 4649

MONITOR: AFCL AFCL 64 9141 ,SR19

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: A SHORTER VERSION OF A PAPER PREPARED
FOR A SEMINAR ON LASERS HELD IN AUGUST 1964 AT NEW
YORK CITY UNDER THE SPONSORSHIP OF THE EDUCATION AND
RESEARCH ASSOCIATION.

DESCRIPTORS: (LASERS, SYMPOSIA), INSTRUMENTATION,
COMMUNICATION SYSTEMS, SPACE COMMUNICATION SYSTEMS,
METALLURGY, MACHINING, MEDICAL RESEARCH, BIOLOGY,
RETINA, RUBY, TRACKING, ACOUSTICS, ROMAN SPECTROSCOPY,
ELECTRON OPTICS, COMPUTERS, PHOTOGRAPHY, DEFENSE
SYSTEMS

(U)

FUNDAMENTALLY THIS ARTICLE IS A SURVEY OF
APPLICATIONS OF LASERS. THE APPLICATIONS ARE
DIVIDED INTO SIX MAJOR AREAS: PRECISION
MEASUREMENTS, COMMUNICATIONS, BIOLOGICAL AND MEDICAL,
OTHER SCIENTIFIC AREAS, METALWORKING, AND
MISCELLANEOUS. A TABLE OF THE BASIC
CHARACTERISTICS OF THE MAJOR TYPES OF LASERS IS
PROVIDED SO THAT THE USER CAN BE MADE AWARE OF THE
LIMITATIONS AND CAPABILITIES OF LASERS. GOOD
EXAMPLES OF APPLICATIONS IN EACH OF THESE AREAS ARE
DESCRIBED IN SOME DETAIL TO ILLUSTRATE WHICH MAJOR
PROPERTIES OF LASER RADIATION ARE USEFUL IN THAT
PARTICULAR AREA. MOST OF THE DISCUSSION PERTAINS
TO PRESENT-DAY APPLICATIONS BUT IN SOME INSTANCES
WHAT APPEAR TO BE GOOD FUTURE APPLICATIONS ARE ALSO
DESCRIBED. SEVENTY-TWO REFERENCES TO THE TECHNICAL
LITERATURE THAT RELATE TO APPLICATIONS ARE PROVIDED.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-610 282

RAND CORP SANTA MONICA CALIF

MATHEMATICAL DONORS AND DIGITAL DIVINERS, (U)

JAN 69

7P

BELLMAN, RICHARD I

REPT. NO. P-2049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (DIGITAL COMPUTERS, MATHEMATICAL
PREDICTION), (MATHEMATICAL PREDICTION, DIGITAL
COMPUTERS), MATHEMATICS, PHYSICS, MEDICAL RESEARCH,
ECONOMICS, COMPUTERS (U)

THE ROLE OF THE DIGITAL COMPUTER IN SCIENTIFIC
RESEARCH IS STUDIED. STRESSED ARE PROBLEMS OF
PREDICTION AND OF SYSTEM IDENTIFICATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-514 216

LOCKHEED MISSILES AND SPACE CO SUNNYVALE CALIF
AN INTEGRATED APPROACH TO EVALUATING THE PERFORMANCE
CAPABILITIES AND PHYSIOLOGICAL STATE OF SPACECRAFT
CREWS. (U)

APR 65 26P LINCOLN, R. S. IMANGELSDORF, J. P.

REPT. NO. 6-65-65-15

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: A PAPER PRESENTED AT THE SYMPOSIUM
ON HUMAN PHYSIOLOGICAL AND PERFORMANCE DETERMINANTS
OF MANNED SPACE SYSTEMS DESIGN, HELD AT SAN
FERNANDO VALLEY STATE COLLEGE 14 APR 69.

DESCRIPTORS: (*SPACE CREWS, PHYSIOLOGY),
(*ASTRONAUTS, PERFORMANCE TESTS), (*SPACE
MEDICINE, TELEMETRY SYSTEMS),
PERFORMANCE (HUMAN), MANNED SPACECRAFT, SPACE
FLIGHT, MONITORS, DISPLAY SYSTEMS, DATA
PROCESSING SYSTEMS, DIGITAL COMPUTERS,
ELECTROCARDIOGRAPHY, SYMPOSIA (U)

RECOGNIZING THE NEED FOR A COMPREHENSIVE
CREW MONITORING PROGRAM, THE LOCKHEED MISSILES AND
SPACE COMPANY HAS INITIATED AN INDEPENDENT
DEVELOPMENT PROJECT CONCERNED WITH ALL MAJOR ASPECTS
OF CREW MONITORING FROM THE DEVELOPMENT OF MEASUREMENT
TECHNIQUES TO THE INTERPRETATION OF PROCESSED DATA.
THE OBJECTIVES OF THE PROJECT ARE: (1) TO
DEVELOP AN AUTOMATIC SYSTEM TO ASSIST IN MONITORING
CREW PERFORMANCE CAPABILITIES AND PHYSIOLOGICAL
STATE, AND (2) TO DEVELOP DIGITAL TECHNIQUES FOR
PROCESSING, DISPLAYING, AND ANALYZING OBTAINED DATA.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-616 362

GEORGIA INST OF TECH ATLANTA

AN INVESTIGATION OF EDP APPLICATIONS IN USAF
HOSPITALS.

(U)

DESCRIPTIVE NOTE: SPECIAL PROBLEM REPT.,

JUN 65 47P THOMPSON, ROBERT L. JR.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (+HOSPITALS, DATA PROCESSING
SYSTEMS), (+AIR FORCE, HOSPITALS), (+MILITARY
MEDICINE, DATA PROCESSING SYSTEMS), STATISTICAL
ANALYSIS, DIAGNOSIS, DATA STORAGE SYSTEMS,
MEDICAL PERSONNEL, TABLES

(U)

THE PRIMARY PURPOSE OF THIS STUDY IS TO INVESTIGATE
CURRENT APPLICATIONS OF EDP IN HOSPITALS WITH
PARTICULAR EMPHASIS ON USES BEING MADE BY USAF
HOSPITALS. A SECONDARY PURPOSE IS TO SUGGEST OR
DEVELOP PROPOSALS FOR AREAS OF FUTURE APPLICATIONS IN
USAF HOSPITALS. THE RESULTS OF THIS STUDY WILL
ALSO PROVIDE A FOUNDATION UPON WHICH FURTHER AND MORE
DETAILED INVESTIGATIONS MAY BE BASED.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-619 284

REPUBLIC AVIATION CORP FARMINGDALE N Y

COLLECTION AND ANALYSIS PROCEDURES FOR PHYSIOLOGICAL
DATA: METHODOLOGY AND APPARATUS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAY 65 29P PETERS, J. M. TAXELROD, IRVING I

ALBRIGHT, G. A. I

CONTRACT: N61339 1444

PROJ: 7709

MONITOR: NAVTRADEVEN , 1444-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY
LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF
REQUESTED BY USERS OF DDC. COPY IS AVAILABLE FOR PUBLIC
SALE.

DESCRIPTORS: (*PHYSIOLOGY, ELECTRONIC RECORDING
SYSTEMS), (*PSYCHOPHYSIOLOGY, ELECTRONIC RECORDING
SYSTEMS), MEASUREMENT, DATA, ANALYSIS,
COMPUTERS, PSYCHOLOGY, PSYCHOMOTOR TESTS,
ELECTROCARDIOGRAPHY, GALVANIC SKIN RESPONSE,
RESPIRATION (U)

IDENTIFIERS: ELECTROMYOGRAPHY,
ELECTROPHYSIOLOGY (U)

A TECHNIQUE FOR COLLECTING, STORING AND ANALYZING
PHYSIOLOGICAL DATA IS PRESENTED WITH A DISCUSSION OF
THE APPARATUS INVOLVED. THE TECHNIQUE PERMITS
STRAIGHTFORWARD CORRELATION OF PSYCHOMOTOR WITH
PHYSIOLOGICAL DATA. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-620 292

NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
A DATA PROCESSING SYSTEM FOR THE
BALLISTOCARDIOGRAM,

(U)

FEB 65 57P MORSE, ROBERT L. ;
REPT. NO. NSAM-915
MONITOR: NAVMED ; MR005.12-7004.6-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BALLISTOCARDIOGRAPHY, MATHEMATICAL
MODELS), (*DATA PROCESSING SYSTEMS,
BALLISTOCARDIOGRAPHY), ANALOG-TO-DIGITAL
CONVERTERS, PULSE RATE, ARTERIES, CARDIOVASCULAR
SYSTEM, DIGITAL COMPUTERS, ELASTICITY, MEDICAL
EQUIPMENT, VELOCITY, ACCELERATION, PUNCHED
CARDS

(U)

THE BALLISTOCARDIOGRAM (BCG) IS A MEASUREMENT OF
CARDIOVASCULAR FUNCTION, YET THE INTERPRETATION OF
THE BALLISTOCARDIOGRAPHIC TRACING IN TERMS OF
MEANINGFUL PHYSIOLOGICAL PARAMETERS HAS BEEN
DIFFICULT. HOWEVER, THE USE OF DATA PROCESSING
FACILITIES WITH A MATHEMATICAL MODEL OF THE BCG
PROVIDES JUST SUCH AN INTERPRETATION. APPROPRIATE
PROCESSING OF THE BCG PROVIDES AN ESTIMATE OF
ARTERIAL ELASTICITY, PULSE WAVE VELOCITY, INTRA-
ARTERIAL PULSE WAVE FORM, AND CORRECT ORDINATES OF
THE ACCELERATION, VELOCITY, AND DISPLACEMENT
BALLISTOCARDIOGRAM. FURTHERMORE, IMPROVEMENT IN
THE ACCURACY OF THESE MEASUREMENTS IS LIKELY WITH
FURTHER DEVELOPMENT OF THE BCG MODEL. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-621 277

MASSACHUSETTS GENERAL HOSPITAL BOSTON STANLEY COBB LABS
FOR PSYCHIATRIC RESEARCH
RESEARCH ON INFORMATION PROCESSING IN THE CENTRAL
NERVOUS SYSTEM. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
JUL 65 26P ERVIN, FRANK R. :

REPT. NO. SR-1

CONTRACT: AF19 628 408

PROJ: 5632

TASK: 563208

MONITOR: AFCRL , 65-580

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY
LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF
REQUESTED BY USERS OF DDC. COPY IS AVAILABLE FOR PUBLIC
SALE.

DESCRIPTORS: (C)CENTRAL NERVOUS SYSTEMS, DATA
PROCESSING SYSTEMS), (C)CEREBRAL CORTEX, VISION),
VISUAL PERCEPTION, VISUAL SIGNALS, DIGITAL
COMPUTERS, CATHODE RAY TUBES, STATISTICAL
ANALYSIS, CATS, STIMULATION, NERVE CELLS (U)
IDENTIFIERS: HISTOGRAMS (U)

A SYSTEM OF AUTOMATIC RECEPTIVE FIELD MAPPING FOR
VISUAL CORTICAL NEURONS BY A DIGITAL COMPUTER. IT
CONSISTS OF (1) STIMULUS DISPLAY BY A DIGITAL
CRT, SIMULTANEOUS DATA SAMPLING AND ON-LINE DATA
PROCESSING INTO A POST-STIMULUS TIME HISTOGRAM AND AN
AVERAGED EVOKED POTENTIAL, AND (2) OFFLINE
READOUT OF NUMERICAL VALUES AND TABULATION. SEVERAL
PROBLEMS LYING BETWEEN THE NEUROPHYSIOLOGICAL OR
STATISTICAL NATURE OF THE RESPONSE AND DATA
PROCESSING TECHNIQUES ARE ALSO DESCRIBED AND
DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000990

AD-622 212

NAVAL MEDICAL RESEARCH LAB NEW LONDON CONN
DESIGN OF A METHOD FOR RECORDING MEDICAL DATA
SIGNIFICANT IN MEDICAL EXAMINATIONS FOR SUBMARINE
SCHOOL CANDIDATES IN ORDER TO PERMIT RAPID ANALYSIS
BY PUNCH CARD TECHNIQUES. (U)

DESCRIPTIVE NOTE: PROGRESS REPT. NO. 2,

OCT 44 SP WILLMON, T. L. BARTLETT, N. R. ;
REPT. NO. MR2-47
PROJ: X247

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MEDICAL EXAMINATION, DATA STORAGE
SYSTEMS), (*PUNCHED CARDS, DATA PROCESSING
SYSTEMS), (*INFORMATION RETRIEVAL, PERSONNEL
MANAGEMENT), (*SUBMARINE PERSONNEL, PERSONNEL
MANAGEMENT), STUDENTS, PSYCHOMETRICS, SELECTION,
DESIGN, ANALYSIS, NAVAL PERSONNEL, VISION,
HEARING (U)

SOME TRENDS IN THE PHYSICAL AND PSYCHOLOGICAL
CHARACTERISTICS OF ENLISTED CANDIDATES FOR THE
SUBMARINE SCHOOL, NEW LONDON, CONNECTICUT
ARE REPORTED. THESE TRENDS ARE REVEALED BY
ANALYSES OF INTERNATIONAL BUSINESS MACHINE
CARDS PUNCHED IN ACCORDANCE WITH THE TECHNIQUE
OUTLINED IN AD-622 216. A MARKED IMPROVEMENT IN
CERTAIN PSYCHOLOGICAL CHARACTERISTICS IS NOTED.
THERE WAS AN INCREASE IN THE NUMBER OF MEN FAILING
STANDARDS FOR VISUAL AND AUDITORY SENSITIVITY.
MOTIVATION AND PHYSICAL EXAMINATION DATA
(EXCLUSIVE OF AUDITORY AND VISUAL FUNCTION) SHOW
NO SIGNIFICANT TREND. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AU-622 216

NAVAL MEDICAL RESEARCH LAB NEW LONDON CONN
DESIGN OF A METHOD FOR RECORDING MEDICAL DATA
SIGNIFICANT IN MEDICAL EXAMINATIONS FOR SUBMARINE
SCHOOL CANDIDATES IN ORDER TO PERMIT RAPID ANALYSIS
BY PUNCH-CARD TECHNIQUES.

MAY 44 12P

WILLMON, T. L. BARTLETT, N. R. I (U)

REPT. NO. MRL-40

PROJ: X247

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (MEDICAL EXAMINATION, DATA STORAGE
SYSTEMS), (PUNCHED CARDS, DATA PROCESSING
SYSTEMS), (INFORMATION RETRIEVAL, PERSONNEL
MANAGEMENT), (SUBMARINE PERSONNEL, PERSONNEL
MANAGEMENT), STUDENTS, NAVAL PERSONNEL, DESIGN,
RECORDS, SELECTION, ANALYSIS,
PSYCHOMETRICS

(U)

A PUNCH-CARD PERSONNEL ACCOUNTING SYSTEM TO
FURNISH INFORMATION FOR MEDICAL AND PERSONNEL
SELECTION OFFICERS IS DESCRIBED. THE SYSTEM WAS
DEVELOPED TO SUIT THE NEEDS OF A PARTICULAR SERVICE
SCHOOL SITUATION. THE REPORT WAS PREPARED IN ORDER TO
DEMONSTRATE ONE APPROACH FOR DEALING WITH PERSONNEL
DATA AND IT IS EMPHASIZED THAT OTHER SITUATIONS MAY
REQUIRE A COMPLETELY DIFFERENT DESIGN. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-627 126

SYSTEMS RESEARCH LABS INC DAYTON OHIO
INTEGRATED DATA COLLECTION, MONITORING, CONVERSION,
AND ANALYSIS SYSTEM FOR PSYCHOPHYSIOLOGICAL STRESS
RESEARCH. (U)

DESCRIPTIVE NOTE: FINAL REPT. FOR 1 JUL 61-31 DEC 63,
JUN 65 106P BRAND, D. H. ILINHART, R. M. I

BURNS, C. A. I

CONTRACT: AF33 657 9810

PROJ: 7222

TASK: 722201

MONITOR: AMRL . TDR-54-64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*STRESS(PHYSIOLOGY), DATA
PROCESSING SYSTEMS), (*STRESS(PHYCHOLOGY), DATA
PROCESSING SYSTEMS), (*DATA PROCESSING SYSTEMS,
PSYCHOPHYSIOLOGY), PHYSIOLOGY, MEDICAL
EXAMINATION, BIOCHEMISTRY, BLOOD CHEMISTRY,
ADAPTATION(PHYSIOLOGY), REACTION(PSYCHOLOGY),
PSYCHOMETRICS, PROGRAMMING(COMPUTER),
PROGRAMMING LANGUAGES, ANALOG-TO-DIGITAL CONVERTERS,
FACTOR ANALYSIS, STATISTICAL ANALYSIS (U)
IDENTIFIERS: FLOW CHARTS (U)

THE DETAILS INVOLVED IN DESIGNING AND EXECUTING A
LARGE-SCALE PSYCHOPHYSIOLOGICAL STRESS EXPERIMENT ARE
SUMMARIZED. DESIGN CRITERIA AND CHANGES IN
EXPERIMENTAL PROCESSES NECESSITATED BY PRELIMINARY,
CONCURRENT STUDIES AS WELL AS INSTRUMENTATION AND
DATA CONVERSION PROBLEMS ARE ALSO PRESENTED.
EMPHASIS IS PLACED ON DESCRIPTION OF THE DATA
PROCESSING ROUTES, EACH OF WHICH CONSISTED OF ANALOG
TAPE FORMATING, ANALOG TO DIGITAL CONVERSION, DATA
REDUCTION AND EDITING, AND DATA ANALYSIS TECHNIQUES.
FLOW DIAGRAMS, COMPUTER PROGRAM WRITEUPS, AND
EXAMPLES OF PICTORIAL OUTPUT FORMATS FOR GENERAL,
AUTOMATIC, BIOLOGICAL DATA HANDLING UTILITY ARE
APPENDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-622 621

UNIVERSIDAD DE LA REPUBLICA MONTEVIDEO (URUGUAY)

INSTITUTO DE NEUROLOGIA

EFFECTS OF PSYCHOPHARMACOLOGIC DRUGS UPON SENSORY
INFLOW IN NORMAL SUBJECTS, PSYCHIATRIC PATIENTS AND
IN ANIMALS. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. FOR 1 OCT 64-30

SEP 65.

SEP 65 16P AUSTI-ELIO GARCIA I

CONTRACT: DA AR049 D92 64G40

PROJ: DA2V0145018710

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PSYCHOTROPIC AGENTS, SENSORY
PERCEPTION), (*PSYCHOSES, PSYCHOTROPIC AGENTS),
BARBITURATES, LYSERGIC ACIDS, NEUROSES,
NEUROLOGY, PHYSIOLOGY, PSYCHIATRY, DRUGS,
ELECTROENCEPHALOGRAPHY, VISUAL PERCEPTION, DATA
PROCESSING SYSTEMS, RATS, GUINEA PIGS, CATS (U)
IDENTIFIERS: SCHIZOPHRENIA, URUGUAY (U)

THE OBJECTIVES OF THE RESEARCH WERE: (1) TO
ESTABLISH CHANGES OBSERVED IN SENSORY EVOKED
POTENTIAL IN NORMAL SUBJECTS BY BARBITURATES,
LYSERGIC ACID, OTHER PSYCHOTROPIC DRUGS IN DIFFERENT
ATTENTIONAL LEVELS AND DURING HABITUATION AND
CONDITIONING. (2) TO DETERMINE THE CHANGES
EVOKED IN PSYCHOTIC PATIENTS, ESPECIALLY
SCHIZOPHRENICS. (3) TO OBSERVE THE EFFECT OF
THESE DRUGS ON ATTENTION, HABITUATION, AND
CONDITIONING IN RAT, GUINEA PIG, AND CAT. IN THE
FIRST YEAR A BEGINNING WAS MADE ON OBJECTIVES 1 AND 2
ADDING SENSORY INFORMATION ON COMATOSE AND STUPOROUS
PATIENTS. THE CAT COMPUTER SYSTEM WAS MODIFIED
TO AUTOMATE RECORDING PROCEDURES ALLOWING
ACCUMULATION FOR PRESENT TIME, READOUT, ERASE AND
RESET WITHOUT OPERATOR ACTION. STUDY OF DRUG
ACTION WAS BEGUN WITH LSD-25 ON VISUAL SENSORY
INFLOW. RESULTS: (1) MULTIPLICATION OF
WAVES, PARTICULARLY FIRST COMPONENTS, (2)
INCREASE IN AMPLITUDE, PARTICULARLY LAST COMPONENTS.
EXPERIMENTS WITH DRUGS ON NEUROTIC AND PSYCHOTIC
PATIENTS ARE NOT YET DEFINITIVE. CHANGES OF VER
I. COMA PATTERN OF RESPONSE ARE SIMILAR TO THAT OF
NEWBORN INFANTS; IN STUPOROUS SUBJECT CHANGES WERE
OBSERVED INDICATIVE OF CHANGE IN LEVEL OF AWARENESS.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-639 194 6/5 5/2
TULANE UNIV NEW ORLEANS LA DIV OF MEDICAL COMPUTING
SCIENCES
FINAL REPORT OF INFORMATION PROCESSING RESEARCH. (U)
MAY 66 9P
CONTRACT: AF 41(609)-2022,
PROJ: AF-7755,
TASK: 75501,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: FINAL REPT. ON BASIC REPT TITLED:
CLINICAL RECORD INFORMATION PROCESSING IN AN
OPERATIONAL ENVIRONMENT, DATED 15 JUL 65.

DESCRIPTORS: (HOSPITALS, DATA PROCESSING
SYSTEMS), MEDICINE, DIAGNOSIS, SURGERY,
THERAPY, MEDICAL PERSONNEL, INFORMATION
RETRIEVAL (U)

THE PROJECT ON CLINICAL INFORMATION PROCESSING
CENTERED PRIMARILY IN THE ORTHOPEDIC OUTPATIENT
CLINIC AND ENCOMPASSED: DATA GATHERING;
INFORMATION RETRIEVAL; REPORT DESIGN; AND PATIENT
INFORMATION. UPON DEVELOPMENT OF THE CHANGE OF
STATUS FORM, DATA PROCESSING WAS EXPANDED TO THE
INPATIENT ORTHOPEDIC SERVICE. OPERATING
PROCEDURES WERE DEVISED AND TESTED FOR GATHERING
PATIENT INFORMATION WITHOUT THE REQUIREMENT FOR
PROFESSIONAL PERSONNEL TO RECORD INFORMATION IN
DUPLICATE. GATHERING OF INFORMATION BY PERSONNEL
WHO WERE VITALLY CONCERNED OR INTERESTED IN THE
SUCCESS OF THE PROGRAM VIRTUALLY ELIMINATED THE
RECORDING OF INACCURATE INFORMATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-641 278 6/3 9/2
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
MANIPULATING DATES AND TIME LAPSES IN A COMPUTERIZED
RECORDS SYSTEM, (U)
SEP 66 17P HUGHES, HARRY M. ;
REPT. NO. SAM-TR-66-77,
PROJ: AF-6319,
TASK: 631002.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*BIOMETRY,
PROGRAMMING(COMPUTERS)), INFORMATION RETRIEVAL,
RECORDING SYSTEMS, NUMBER THEORY, DATA
PROCESSING SYSTEMS, HOSPITALS, MEDICAL
RESEARCH (U)

A TECHNIC FOR HANDLING DATES WITHIN A COMPUTER AS
CONSECUTIVE INTEGERS IS DEFINED AND ILLUSTRATED.
VARIOUS POSSIBLE APPLICATIONS ARE SUGGESTED, WITH
AN EXAMPLE DEMONSTRATING CONVERSION IN, CONVERSION
OUT, TIME BETWEEN DATES, NUMBER OF WEEKDAYS BETWEEN
DATES, AND IDENTIFICATION OF A BIWEEKLY REPORT DATE.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000790

AD-642 772 6/16 5/2 7/8
ARMY NATICK LABS MASS CLOTHING AND ORGANIC MATERIALS
DIV
PUNCH-CARD INFORMATION RETRIEVAL SYSTEMS FOR
FLASHBLINDNESS PROTECTION RESEARCH. I. PHOTOCHROMIC
MATERIALS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT., JAN 65-JAN 66,
NOV 66 41P MACNAIR, RICHARD N. I
REPT. NO. C/CM-24
PROJ: D2-1C024401A349
MONITOR: USA-NLANS TR-67-14-CM

UNCLASSIFIED REPORT

DESCRIPTORS: (*FLASHBLINDNESS, INFORMATION
RETRIEVAL), (*PHOTOCHROMISM, FLASHBLINDNESS),
PUNCHED CARDS, PROGRAMMING (COMPUTERS), INPUT-
OUTPUT DEVICES, PHYSIOLOGY, DATA PROCESSING
SYSTEMS, ORGANIC COMPOUNDS, BLINDNESS (U)

THE INFORMATION RETRIEVAL SYSTEM DESCRIBED WAS SET
UP TO INCLUDE PHOTOCHROMIC MATERIALS, ORGANIC
SEMICONDUCTORS, IMAGE CONVERTER DEVICES, AND OTHER
PROTECTIVE SYSTEMS. TWO TYPES OF DATA ARE CODED IN
THE SYSTEM: (1) GENERAL INFORMATION INCLUDING
AUTHORS, PUBLICATIONS, DATES, AND COMMENTS. (2)
SPECIFIC DATA FOR INDIVIDUAL COMPOUNDS AND SUBJECTS.
THE SPECIFIC DATA DESCRIBED IN THIS REPORT PERTAIN
TO PHOTOCHROMIC MATERIALS, THE AREA OF PRESENT IN-
HOUSE RESEARCH AT THE U. S. ARMY NATICK
LABORATORIES (NLANS). SUBJECT AND COMPOUND CODES
FOR OTHER AREAS WILL BE PREPARED AND REPORTED
SEPARATELY WHEN NEEDED. METHODS FOR CODING THE
DATA ON 5 X 9-INCH, DOUBLE-ROW HAND PUNCH CARDS ARE
PRESENTED. INFORMATION IS RETRIEVED IN ANY ORDER
BY SORTING THE CODED CARDS FOR SUBJECTS, AUTHORS,
DATES, AND PUBLICATIONS, THUS PROVIDING A VERSATILE
SYSTEM FOR OBTAINING ANY INFORMATION PREVIOUSLY
CODED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000990

AD-648 490 6/19 9/6
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX
BIO-TELEMETRY PROBLEMS DURING PROLONGED SPACE
MISSIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL TRANS.,
67 14P AKULINICHEV, I. T. I
ZHCANOV, A. M. IPOPOV, I. I. I
REPT. NO. SAM-7T-R-814-1166
MONITOR: TT 67-61273

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PROBLEMY BIOTELEMETRII V
DLITEL'NYKH KOSMICHESKIKH POLETAKH, TRANS. OF RUSSIAN
PAPER PRESENTED AT INTERNATIONAL ASTRONAUTICAL
CONGRESS (17TH), MADRID (SPAIN), 9-18 OCT
1966.

DESCRIPTORS: (*SPACE MEDICINE, TELEMETER
SYSTEMS), SPACE FLIGHT, ASTRONAUTS, MEDICAL
EXAMINATION, DATA TRANSMISSION SYSTEMS, RADIO
TRANSMISSION, SENSORS, ELECTRODES, DIGITAL
COMPUTERS, USSR (U)

IN THE FUTURE, SPACECRAFT WILL UNDERGO STRUCTURAL
CHANGES (WELDING PROCESSES AND PARTITIONING OR
DISTRIBUTION OF WEIGHT AND EQUIPMENT), AND THE
CREWMEMBERS WILL PERFORM MORE AND MORE EXTRAVEHICULAR
ACTIVITIES; THEREFORE, THE MEDICAL CONTROL SYSTEMS
WILL ALSO HAVE TO BE CHANGED ACCORDINGLY. RADIO
COMMUNICATION CHANNELS AND INSTRUMENTS WILL ALSO HAVE
TO CONFORM WITH THE DIFFERENT OPERATIONAL TASKS.
AT PRESENT, SHORT-RANGE (ON-BOARD AND NEAR
SPACECRAFT) BIO-TELEMETRY SYSTEMS PRESENT A
RELATIVELY LARGE NUMBER OF PROBLEMS. IN FACT,
THOSE INVOLVING IMPORTANT TECHNICAL AND EXPERIMENTAL
CONSTRUCTION PRINCIPLES AND SOME OF THE BASIC
PARAMETERS HAVE NOT BEEN SOLVED AS YET. THE REPORT
DISCUSSES THE NEED FOR FUTURE THEORETICAL AND
EXPERIMENTAL RESEARCH OF RADIO WAVES PROPAGATION IN
SOLID, CLOSED SPACES AND FOR THE IMPLEMENTATION OF
RADIO CHANNELS OFFERING A HIGHLY RELIABLE
TRANSMISSION OF BIO-TELEMETRY DATA. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-650 002 6/5 9/6
ARMY RESEARCH INST OF ENVIRONMENTAL MEDICINE NATICK
MASS
A DIGITAL TELEMETRY SYSTEM FOR PHYSIOLOGICAL
VARIABLES.
JUL 66 4P BOTSCH, FRANCIS W. 1 (U)

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN IEEE TRANSACTIONS ON
COMMUNICATIONS TECHNOLOGY VCOM-14 N6 P825-8 DEC
1966.

SUPPLEMENTARY NOTE: PRESENTED AT THE NATIONAL
TELEMETERING CONFERENCE (1966), BOSTON, MASS.

DESCRIPTORS: (MILITARY MEDICINE, *TELEMETRY
SYSTEMS), MEDICAL EXAMINATION, DATA TRANSMISSION
SYSTEMS, DIGITAL SYSTEMS, PUNCHED TAPE, DATA
PROCESSING SYSTEMS, PACKAGING (U)

A RADIO TELEMETRY SYSTEM IS DESCRIBED WHICH
SATISFIES THE DATA ACQUISITION REQUIREMENTS FOR
RESEARCH IN THE FIELD OF MILITARY ENVIRONMENTAL
MEDICINE. THE ADOPTION OF DIGITAL ENCODING,
TRANSMITTING, AND RECORDING TECHNIQUES, AND THE
DEVELOPMENT OF A METHODOLOGY WHICH FEATURES SERIAL
INTERROGATION BY A PORTABLE DATA RECORDING STATION,
HAVE RESULTED IN THE CONSTRUCTION OF A 100-SUBCHANNEL
FACILITY CAPABLE OF PRECISE MEASUREMENT AND RECORDING
OF A VARIETY OF PHYSIOLOGICAL MEASUREMENTS DURING FIELD
MANEUVERS. THE BASIC EQUIPMENT CONFIGURATION
INCLUDES A DATA RECORDING STATION WHICH GENERATES THE
TIME BASE FOR INTERROGATION AND PRODUCES A PUNCHED
PAPER TAPE SUITABLE FOR DIRECT COMPUTER ENTRY AND
FIVE ASSOCIATED DATA ACQUISITION STATIONS CARRIED BY
TEST SUBJECTS PERFORMING MILITARY TASKS IN
ENVIRONMENTAL EXTREMES. ALL UNITS ARE
SELF-CONTAINED, BATTERY-POWERED, SOLID-STATE PACKAGES
COMPATIBLE WITH STANDARD ARMY LOAD CARRYING SYSTEMS.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-652 005 9/2 12/2
NORTHWESTERN UNIV EVANSTON ILL DEPT OF GEOGRAPHY
SPATIAL DATA SYSTEMS: ORGANIZATION OF SPATIAL
DATA. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 66 69P DUEKER, KENNETH J. 3
REPT. NO. TR-4
CONTRACT: NONR-1228(77)
TASK: 389-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 006 AND AD-652
007.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS,
INFORMATION RETRIEVAL), (*URBAN PLANNING,
MODELS(SIMULATIONS)), GEOGRAPHY, STATISTICAL
ANALYSIS, TRAFFIC, DISPLAY SYSTEMS (U)
IDENTIFIERS: SPATIAL DATA SYSTEMS (U)

THIS REPORT PROVIDES A LIMITED EXPLICATION OF
CURRENT NEEDS FOR CLASSIFYING AND ORGANIZING SPATIAL
DATA FOR USE IN URBAN AND TRANSPORTATION PLANNING.
IN ADDITION, REQUIREMENTS AND METHODS FOR HANDLING
SPATIAL DATA ARE EXPLORED. THE REPORT EMPHASIZES
THE DUAL NEED FOR DATA ORGANIZATION METHODS AND DATA
HANDLING CAPABILITIES, AS A REQUISITE FOR UTILIZATION
OF DATA ACQUIRED FROM REMOTE SENSORS MOUNTED ON EARTH
ORBITAL PLATFORMS. THIS WORK PROVIDES A BASIS FOR
EXAMINATION OF SOME PROBLEMS OF INTEGRATING REMOTE
SENSORS INTO A VIABLE GEOGRAPHIC INFORMATION SYSTEM. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-452 006 9/2 12/2
NORTHWESTERN UNIV EVANSTON ILL DEPT OF GEOGRAPHY
SPATIAL DATA SYSTEMS: SYSTEMS CONSIDERATIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.;
DEC 66 BOP DUEKER, KENNETH J. I
REPT. NO. TR-5
CONTRACT: NONR-1228(27)
TASK: 360-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-452 005 AND AD-452
007.

DESCRIPTORS: (•DATA PROCESSING SYSTEMS,
INFORMATION RETRIEVAL), (•URBAN PLANNING,
MODELS(SIMULATIONS)), GEOGRAPHY, STATISTICAL
ANALYSIS, TRAFFIC, DISPLAY SYSTEMS,
PROGRAMMING(COMPUTERS), PROGRAMMING
LANGUAGES (U)
IDENTIFIERS: SPATIAL DATA SYSTEMS, QUEST (U)

THIS REPORT PROVIDES A LIMITED EXPLICATION OF
CURRENT NEEDS FOR CLASSIFYING AND ORGANIZING SPATIAL
DATA FOR USE IN URBAN AND TRANSPORTATION PLANNING.
IN ADDITION, REQUIREMENTS AND METHODS FOR HANDLING
SPATIAL DATA ARE EXPLORED. THE REPORT EMPHASIZES
THE DUAL NEED FOR DATA ORGANIZATION METHODS AND DATA
HANDLING CAPABILITIES, AS A REQUISITE FOR UTILIZATION
OF DATA ACQUIRED FROM REMOTE SENSORS MOUNTED ON EARTH
ORBITAL PLATFORMS. THIS WORK PROVIDES A BASIS FOR
EXAMINATION OF SOME PROBLEMS OF INTEGRATING REMOTE
SENSORS INTO A VIABLE GEOGRAPHIC INFORMATION SYSTEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-652 007 9/2 13/2
NORTHWESTERN UNIV EVANSTON ILL DEPT OF GEOGRAPHY
SPATIAL DATA SYSTEMS: SPECIAL TOPICS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 66 67P DUEKER, KENNETH J. 1
REPT. NO. TR-6
CONTACT: NONR-1228(37)
TASK: 389-142

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 005 AND AD-692
006.

DESCRIPTORS: (DATA PROCESSING SYSTEMS,
INFORMATION RETRIEVAL), (URBAN PLANNING,
MODELS(SIMULATIONS)), GEOGRAPHY, STATISTICAL
ANALYSIS, TRAFFIC, DISPLAY SYSTEMS,
PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: SPATIAL DATA SYSTEMS, LIST (U)
PROCESSING (U)

THIS REPORT PROVIDES A LIMITED EXPLICATION OF
CURRENT NEEDS FOR CLASSIFYING AND ORGANIZING SPATIAL
DATA FOR USE IN URBAN AND TRANSPORTATION PLANNING.
IN ADDITION, REQUIREMENTS AND METHODS FOR HANDLING
SPATIAL DATA ARE EXPLORED. THE REPORT EMPHASIZES
THE DUAL NEED FOR DATA ORGANIZATION METHODS AND DATA
HANDLING CAPABILITIES, AS A REQUISITE FOR UTILIZATION
OF DATA ACQUIRED FROM REMOTE SENSORS MOUNTED ON EARTH
ORBITAL PLATFORMS. THIS WORK PROVIDES A BASIS FOR
EXAMINATION OF SOME PROBLEMS OF INTEGRATING REMOTE
SENSORS INTO A VIABLE GEOGRAPHIC INFORMATION SYSTEM. (U)

UNCLASSIFIED

PDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-652 241 6/5 9/2
TECHNOLOGY INC SAN ANTONIO TEX
VECTAN: A DIGITAL COMPUTER PROGRAM FOR THE ANALYSIS
OF VECTORCARDIOGRAM DATA. (U)
DESCRIPTIVE NOTE: REPT. FOR 1 DEC 64-1 DEC 66.
FEB 67 129P ARMENT, BRIAN E. J
HIGGINS, LAWRENCE S. J
REPT. NO. TJ-00110-67-10
CONTRACT: AF 41(609)-2267

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, *COMPUTER
PROGRAMS), DIGITAL COMPUTERS, ANALYSIS,
MEDICAL EXAMINATION, HARMONIC ANALYSIS (U)
IDENTIFIERS: VECTAN (U)

THE REPORT COVERS THE RESULTS OF AN INVESTIGATION
OF FILTERING TECHNIQUES FOR THE SPATIAL VECTOR
VELOCITY FUNCTION OF VECTORCARDIOGRAM DATA. THE
OPERATION OF A COMPUTER PROGRAM TO PERFORM AN
INTERVAL-MEASUREMENT ANALYSIS OF THE FUNCTION, AND A
QUALITATIVE DISCUSSION OF THE RESULTS. A SECOND
REPORT DESCRIBES AN ELECTRONIC DATA ACQUISITION,
CALIBRATION, AND IDENTIFICATION SYSTEM FOR
VECTORCARDIOGRAMS. (AUTHOR: (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-654 227 9/2 6/4 12/1
PURDUE UNIV LAFAYETTE IND SCHOOL OF ELECTRICAL
ENGINEERING
CYBERNETIC PREDICTING DEVICES. (U)
APR 66 25GP IVAKINENKO, A. G. ILAPA, V.
U. S.
REPT. NO. TR-EE66-5
MONITOR: TT 67-62166

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MOND. KIBERNETICHESKIE
PREDOKAZIVATUSHCHIE USTROISTVA, KIEV, 1965 N.P.

DESCRIPTORS: (*CYBERNETICS, *COMPUTERS),
STOCHASTIC PROCESSES, WEATHER FORECASTING,
MATHEMATICAL ANALYSIS, EARTHQUAKES, INSECTS,
MEDICINE, PROBABILITY, METEOROLOGICAL PHENOMENA,
ACCURACY, PROBABILITY, ERRORS, TABLES,
EQUATIONS, OCEAN WAVES, PATTERN RECOGNITION,
ALGORITHMS, FEEDBACK, AMPLITUDE MODULATION,
USSR (U)

PREDICTING PROGRAMS DESIGNED FOR LARGE GENERAL-
PURPOSE COMPUTERS CONSTITUTE AN IMPORTANT NEW TOOL IN
THE CONTROL OF PRODUCTION AND ECONOMICS.
NEVERTHELESS, SMALL PREDICTING FILTERS HAVE THEIR
OWN DOMAIN OF APPLICATION. THEY CAN BE REALIZED
NOT ONLY AS PROGRAMS FOR GENERAL-PURPOSE COMPUTERS,
BUT ALSO AS SIMPLE ANALOG DEVICES WITH VERY FAST
RESPONSE. THE AUTHORS DISCUSS THREE PRINCIPAL
METHODS OF PREDICTION IN ADDITION TO SOME OTHERS.
PREDICTION OF DETERMINISTIC PROCESSES, I.E.
EXTRAPOLATION AND INTERPOLATION, PREDICTION OF
STOCHASTIC PROCESSES, BASED ON STATISTICAL PREDICTION
THEORY, PREDICTION BASED ON ADAPTATION OR LEARNING
OF THE PREDICTING FILTERS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 287 6/16 5/10
WASHINGTON SCHOOL OF PSYCHIATRY D C
SOMATIC CORRELATES OF PSYCHOLOGICAL REACTION. (U)
DESCRIPTIVE NOTE: FINAL REPT. 19 OCT 57-20 JUN 64.
JUN 67 25P BURNHAM, DONALD L. I
CONTRACT: DA-49-007-MD-902

UNCLASSIFIED REPORT

DESCRIPTORS: (*PSYCHOPHYSIOLOGY, *CARDIOVASCULAR
SYSTEM), STRESS(PSYCHOLOGY), CENTRAL NERVOUS
SYSTEM, AUTONOMIC NERVOUS SYSTEM, PHYSIOLOGY,
NERVOUS SYSTEM, ENDOCRINE GLANDS, MENTAL
DISORDERS, PSYCHOSES, EMOTIONS, HYPNOSIS,
RESPONSES, CONDITIONED REFLEX, CARDIOVASCULAR
DISEASES, REACTION(PSYCHOLOGY), PSYCHIATRY,
DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: PSYCHOSOMATIC DISORDERS, (U)
SCHIZOPHRENIA

A NUMBER OF EXPLORATORY LONGITUDINAL STUDIES WERE
CONDUCTED ON CORRELATIONS BETWEEN CARDIOVASCULAR
REACTIVITY IN SEVERAL PARAMETERS AND CHANGING
PSYCHOLOGICAL STATES IN HEALTHY AND PATIENT
POPULATIONS. THESE STUDIES WERE EXPANDED TO
INCLUDE LONGITUDINAL ANALYSES OF CHANGES IN
PSYCHOENDOCRINE PATTERNS IN 'NORMAL' HUMAN SUBJECTS,
ACUTE SCHIZOPHRENIC PATIENTS AND ANIMALS. ANOTHER
EXTENSION OF THESE STUDIES INCLUDED AUTONOMIC
CONDITIONING IN HUMANS AND ANIMALS IN WHICH OPERANT
TECHNIQUES WERE UTILIZED. RELATED INTRACRANIAL
STIMULATION EXPERIMENTS WERE PERFORMED ON ANIMALS AND
TENTATIVE ATTEMPTS WERE MADE FOR ITS UTILIZATION IN
THE ALLEVIATION OF INTRACTIBLE PAIN IN TERMINAL
CANCER PATIENTS. SEVERAL TECHNICAL DEVELOPMENTS
WERE MADE IN TRANSDUCERS AND AN AUTOMATIC MULTIPLE
CHANNEL GENERAL PURPOSE DATA PROCESSING SYSTEM
FOR PHYSIOLOGICAL VARIABLES WAS DESIGNED AND BUILT
WHICH IS NOW IN OPERATION IN RELATED EXPERIMENTS.
(AUTHOR) (U)

UNCLASSIFIED

DNC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 511 6/5 5/2 5/9
URS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION BASIC STUDY, FOR THE
STUDY OF A METHOD FOR INTEGRATION OF MEDICAL
ACCOUNTING, REPORTING, SUPPLY, AND REGULATING OF THE
ARMY IN THE FIELD INTO ADSAF PROGRAM. (U)
OCT 65 131P
CONTRACT: DA-34-595-AMC-671(R)
PROD: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 511.

DESCRIPTORS: (MILITARY MEDICINE,
DOCUMENTATION), (MEDICAL PERSONNEL, MILITARY
MEDICINE), MODELS(SIMULATIONS), COST
EFFECTIVENESS, REPORTS, MEDICAL SUPPLIES,
MILITARY INTELLIGENCE, DATA PROCESSING SYSTEMS,
FEASIBILITY STUDIES, EVACUATION, MILITARY
ORGANIZATIONS, COMMUNICATION SYSTEMS, LOGISTICS,
MANAGEMENT ENGINEERING, HOSPITALS, JOB
ANALYSIS (U)

THE PURPOSE OF THIS DOCUMENT IS TO ACCOMPLISH THE
FOLLOWING OBJECTIVES: (1) TO PROVIDE THE
TECHNICAL RATIONALE USED IN DEVELOPING THE
DOCUMENTATION FOR SPECIFIED FUNCTIONAL AREAS.
(2) TO PROVIDE INFORMATION CONCERNING THE
ORGANIZATION AND FUNCTION OF MILITARY STAFFS AND
GENERAL CONCEPTS OF MILITARY ORGANIZATION AND
OPERATIONS TO THE READER WHO IS NOT AS KNOWLEDGEABLE
IN SUCH AREAS AS THE EXPERIENCED MILITARY OFFICER.
(3) TO SHOW THE RELATIONSHIP OF THE DUTIES AND
RESPONSIBILITIES OF THE MEDICAL SERVICE STAFF OFFICER
TO OTHER STAFF FUNCTIONS WITHIN A MILITARY STAFF.
(4) TO DEFINE THE FUNCTION OF MEDICAL UNITS IN
A THEATER OF OPERATIONS. (5) TO PROVIDE
FUNCTIONAL AREA DESCRIPTIONS FOR THE SPECIFIED
FUNCTIONAL AREAS IN SUFFICIENT DETAIL TO PROVIDE A
BASIS FOR DESIGNING SIMULATION MODELS TO BE USED IN
THE COST-EFFECTIVENESS ANALYSIS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000990

AD-655 511 6/5 5/2 5/9
URS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION PATIENT ACCOUNTING ANNEX
A. FOR THE STUDY OF A METHOD FOR INTEGRATION OF
MEDICAL ACCOUNTING, REPORTING, SUPPLY, AND REGULATING
OF THE ARMY IN THE FIELD INTO THE ADSAF PROGRAM. (U)
OCT 65 121P
CONTRACT: DA-04-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 510.

DESCRIPTORS: (MILITARY MEDICINE,
DOCUMENTATION); (CASUALTIES, MILITARY
MEDICINE), MEDICAL PERSONNEL,
MODELS(SIMULATIONS), COST EFFECTIVENESS,
REPORTS, MEDICAL SUPPLIES, MILITARY
INTELLIGENCE, DATA PROCESSING SYSTEMS, FEASIBILITY
STUDIES, EVACUATION, MILITARY ORGANIZATIONS,
COMMUNICATION SYSTEMS, LOGISTICS, MANAGEMENT
ENGINEERING, HOSPITALS, JOB ANALYSIS (U)

THE PATIENTS ACCOUNTING FUNCTIONAL AREA IS
THAT PROCESS WHICH PROVIDES FOR THE COLLECTION,
RECORDING, SUMMARIZING, AND REPORTING OF DATA
REGARDING PATIENTS HOSPITALIZED AND/OR EVACUATED IN
THE ARMY IN THE FIELD. IT INCLUDES THE
RESPONSIBILITY FOR SATISFYING THOSE ESSENTIAL PATIENT
DATA REQUIREMENTS OF ELEMENTS OR AGENCIES SUPERIOR
TO, OR IN SUPPORT OF, MEDICAL TREATMENT FACILITIES IN
A THEATER OF OPERATIONS. THIS DOCUMENT DESCRIBES
THE CURRENT PATIENTS ACCOUNTING SYSTEM IN ONE
DIVISION, ONE CORPS, ONE FIELD ARMY, AND ONE THEATER
ARMY COMMAND. IT IS ASSUMED THAT THESE OPERATIONS
WILL BE APPLICABLE IN ALL SIMILAR ORGANIZATIONS. I.E.,
ONE DIVISION OPERATION TYPIFIES ALL DIVISIONS, ONE
CORPS TYPIFIES ALL CORPS, ETC. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 512 6/5 5/2 5/9
JRS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION MEDICAL REGULATING ANNEX
B, FOR THE STUDY OF A METHOD FOR INTEGRATION OF
MEDICAL ACCOUNTING, REPORTING, SUPPLY, AND REGULATING
OF THE ARMY IN THE FIELD INTO THE ADSAF PROGRAM (U)
OCT 65 66P
CONTRACT: DA-P4-475-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 511.

DESCRIPTORS: (MILITARY MEDICINE,
DOCUMENTATION), (CASUALTIES, MILITARY
MEDICINE), MEDICAL PERSONNEL, COST
EFFECTIVENESS, REPORTS, MEDICAL SUPPLIES,
MILITARY INTELLIGENCE, DATA PROCESSING SYSTEMS,
FEASIBILITY STUDIES, MODELS(SIMULATIONS),
EVACUATION, HOSPITALS, MILITARY ORGANIZATIONS,
COMMUNICATION SYSTEMS, LOGISTICS, MANAGEMENT
ENGINEERING, JOB ANALYSIS (U)

MEDICAL REGULATING IS THAT PART OF THE OVERALL
SPHERE OF MEDICAL OPERATIONS WHICH COORDINATES AND
CONTROLS THE MOVEMENT OF PATIENTS TO THE MEDICAL
FACILITIES WHICH ARE BEST ABLE TO PROVIDE CARE AT
THAT TIME. MANY FACTORS ARE CONSIDERED IN
CONTROLLING THE MOVEMENT OF PATIENTS THROUGH THE
HOSPITALIZATION AND EVACUATION SYSTEM. SOME OF
THESE FACTORS ARE CURRENT BED STATUS OF TREATMENT
FACILITIES (I.E., BEDS OCCUPIED, NOT OCCUPIED);
SURGICAL BACKLOG IN HOURS; LOCATION OF FACILITIES
WITH SPECIALTY CAPABILITIES; NUMBER AND LOCATION OF
PATIENTS BY DIAGNOSTIC CATEGORY; TACTICAL SITUATION
IN THE COMBAT ZONE; LOCATION OF AIRFIELDS AND
RAILHEADS; MEDICAL RESOURCES AVAILABLE AT EACH
TREATMENT FACILITY; AND AVAILABILITY OF
TRANSPORTATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 513 6/5 5/2 6/12 5/5
URS CORP SIERRA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION MEDICAL SUPPLY ANNEX C,
FOR THE STUDY OF A METHOD FOR INTEGRATION OF MEDICAL
ACCOUNTING, REPORTING, SUPPLY, AND REGULATING OF THE
ARMY IN THE FIELD INTO THE ADSAF PROGRAM. (U)
OCT 65 128P
CONTRACT: DA-04-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 512.

DESCRIPTORS: (MILITARY MEDICINE,
DOCUMENTATION), (MEDICAL SUPPLIES, MILITARY
MEDICINE), CASUALTIES, MEDICAL PERSONNEL, COST
EFFECTIVENESS, REPORTS, MILITARY INTELLIGENCE,
DATA PROCESSING SYSTEMS, FEASIBILITY STUDIES,
MODELS(SIMULATIONS), EVACUATION, HOSPITALS,
INVENTORY CONTROL, LOGISTICS, MILITARY
ORGANIZATIONS, COMMUNICATION SYSTEMS, MANAGEMENT
ENGINEERING, JOB ANALYSIS (U)

THE OPERATIONAL OBJECTIVES OF MEDICAL SUPPLY ARE
(1) TO PROVIDE AN ADEQUATE, TIMELY, AND CONSTANT
SUPPLY OF ALL ITEMS NECESSARY TO GIVE COMPLETE
MEDICAL SERVICE TO EVERY SICK OR INJURED INDIVIDUAL
IN THE COMMAND; (2) TO PROVIDE MAINTENANCE OF ALL
ITEMS OF MEDICAL EQUIPMENT; AND (3) TO PROVIDE
SPECTACLE FABRICATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-655 515 6/5 5/2 5/9
JCS CORP SIERPA VISTA ARIZ ARIZONA SYSTEMS CENTER
FUNCTIONAL AREA DESCRIPTION MEDICAL REPORTING ANNEX
E, FOR THE STUDY OF A METHOD FOR INTEGRATION OF
MEDICAL ACCOUNTING, REPORTING, SUPPLY, AND REGULATING
OF THE ARMY IN THE FIELD INTO THE ADSAF PROGRAM. (U)
OCT 65 111P
CONTRACT: DA-24-495-AMC-671(R)
PROJ: USACDCMSA-65-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 514.

DESCRIPTORS: (MILITARY MEDICINE,
DOCUMENTATION), CASUALTIES, HOSPITALS,
REPORTS, MEDICAL PERSONNEL, MEDICAL SUPPLIES,
STATISTICAL ANALYSIS, COST EFFECTIVENESS, DATA
PROCESSING SYSTEMS, FEASIBILITY STUDIES,
EVACUATION, MANAGEMENT ENGINEERING, JOB
ANALYSIS (U)

MEDICAL REPORTING IS DEFINED AS THE EXTRACTION OF
CERTAIN INFORMATION FROM THE PATIENTS' HEALTH AND
CLINICAL RECORDS BY THE ATTENDING MEDICAL FACILITIES
AND THE SUBSEQUENT SUMMARIZATIONS OF THIS INFORMATION
INTO STATISTICAL REPORTS. THESE DATA ARE UTILIZED
BY THOSE WHO ARE DIRECTLY ADMINISTERING MEDICAL AND
NURSING CARE - SURGEONS AND STAFF AT COMMAND LEVELS -
AND THE OFFICE OF THE SURGEON GENERAL (OTSG).
THE DESCRIPTION OF HEALTH AND CLINICAL RECORDS IS
INCLUDED PRIMARILY TO PROVIDE THE CONSIDERATION OF
SUCH RECORDS AS POTENTIAL SOURCES OF INFORMATION FOR
MEDICAL REPORTING. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-656 868 20/9 9/4 9/2 17/2
 9/3 9/7 9/10 14/2
MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF
ELECTRONICS
RESEARCH LABORATORY OF ELECTRONICS QUARTERLY PROGRESS
REPORT NO. 86, JULY 15, 1967, (U)
JUL 67 402P ZIMMERMANN, H. J. ;
HARVEY, G. G. IMASO, S. J. ;
CONTRACT: DA-28-042-AMC-02526(E), NONR-1841(42)

UNCLASSIFIED REPORT

DESCRIPTORS: (*PHYSICS, SCIENTIFIC RESEARCH),
(*ELECTRONICS LABORATORIES, REPORTS), (*PLASMA
PHYSICS, SCIENTIFIC RESEARCH), (*INFORMATION
THEORY, SCIENTIFIC RESEARCH), MOLECULAR BEAMS,
SPECTROSCOPY, RADIO ASTRONOMY, UPPER ATMOSPHERE,
ELECTRONICS, DATA PROCESSING SYSTEMS, DATA
TRANSMISSION SYSTEMS, SPEECH, LINGUISTICS,
NERVOUS SYSTEM, PSYCHIATRY (U)

CONTENTS: MOLECULAR BEAMS; MOLECULAR ENERGY
TRANSFER AND SPECTROSCOPY; MICROWAVE SPECTROSCOPY;
ATOMIC RESONANCE AND SCATTERING; RADIO ASTRONOMY;
OPTICAL AND INFRARED SPECTROSCOPY; GEOPHYSICAL
RESEARCH; MAGNETIC RESONANCE; PHYSICAL
ELECTRONICS AND SURFACE PHYSICS; PHYSICAL
ACOUSTICS; ELECTRODYNAMICS OF MEDIA; PHYSICAL
OPTICS OF INVERTEBRATE EYES; PLASMA PHYSICS;
GASEOUS ELECTRONICS; PLASMAS AND CONTROLLED
NUCLEAR FUSION; ENERGY CONVERSION RESEARCH;
SPONTANEOUS RADIOFREQUENCY EMISSION FROM HOT-
ELECTRON PLASMAS; INTERACTION OF LASER RADIATION
WITH PLASMAS AND NONADIABATIC MOTION OF PARTICLES IN
MAGNETIC FIELDS; STATISTICAL COMMUNICATION THEORY;
PROCESSING AND TRANSMISSION OF INFORMATION;
DETECTION AND ESTIMATION THEORY; SPEECH
COMMUNICATION; LINGUISTICS; COGNITIVE INFORMATION
PROCESSING; COMMUNICATIONS BIOPHYSICS;
NEUROPHYSIOLOGY; COMPUTATION RESEARCH. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-660 542 6/19 6/11 6/7
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY
DIV
SPACE BIOLOGY AND MEDICINE, VOL. 1, A NEW SOVIET
JOURNAL 1967. (U)
DESCRIPTIVE NOTE: SPECIAL REPT.,
NOV 67 62P PARIN, V. V. IGORBOV, F.
D. ;
REPT. NO. ATD-67-27

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ABSTRACT TRANS. OF KOSMICHESKAYA
BIOLOGIYA I MEDITSINA (USSR) VI N1 P7-82 1967. THE
ABOVE JOURNAL IS ALSO TRANSLATED COVER-TO-COVER. REPT. ON
SURVEYS OF FOREIGN SCIENTIFIC AND TECHNICAL
LITERATURE.

DESCRIPTORS: (*SPACE MEDICINE, REPORTS),
(*SPACE BIOLOGY, REPORTS), (*LIFE SUPPORT,
REPORTS), ASTRONAUTS, SPACECRAFT, COMPUTERS,
GASTROINTESTINAL SYSTEM, DIGESTIVE SYSTEM
DISEASES, WEIGHTLESSNESS, ACCELERATION TOLERANCE,
RADIATION EFFECTS, PLANTS(ROTANY), HYPOXIA,
CARDIOVASCULAR SYSTEM, PROTEINS, BIOSYNTHESIS,
HEMATOLOGY, VESTIBULAR APPARATUS, VISION,
NERVE CELLS, ABSTRACTS, PERIODICALS, STATE-OF-
THE-ART REVIEWS, USSR (U)

THE REPORT IS A COLLECTION OF ABSTRACTS COVERING
THE FIRST ISSUE OF THE NEW SOVIET JOURNAL,
KOSMICHESKAYA BIOLOGIYA I MEDITSINA (SPACE
BIOLOGY AND MEDICINE). THE NEW JOURNAL IS A
BIMONTHLY PERIODICAL PUBLISHED BY THE MINISTRY OF
HEALTH USSR UNDER THE GENERAL EDITORSHIP OF
ACADEMICIAN V. V. PARIN. ARTICLES ON
BIOASTRONAUTICS, WHICH HAVE HITHERTO BEEN SCATTERED
THROUGH A GREAT VARIETY OF SOVIET SCIENTIFIC AND
TECHNICAL PUBLICATIONS, WILL PRESUMABLY BE MORE
CONVENIENTLY GATHERED BETWEEN THE COVERS OF THE NEW
JOURNAL, WHICH IS THE FIRST TO BE DEVOTED
SPECIFICALLY TO THE PROBLEMS OF SPACE BIOLOGY AND
MEDICINE. SINCE IT WILL BE SOME TIME BEFORE ANY
TRANSLATION BECOMES AVAILABLE, IT WAS DECIDED THAT
PUBLICATION OF ABSTRACTS OF ALL OF THE 14 SCIENTIFIC
ARTICLES IN THE FIRST ISSUE OF KOSMICHESKAYA
BIOLOGIYA I MEDITSINA AS A SINGLE UNIT WOULD RENDER A
DISTINCT SERVICE TO THE U. S. BIOASTRONAUTICS
COMMUNITY. HALF OF THE ARTICLES IN THE FIRST ISSUE
ARE REPORTS OF ORIGINAL RESEARCH, WHICH HAVE BEEN
ABSTRACTED IN THE USUAL WAY. THE OTHER HALF ARE
REVIEW PAPERS DESCRIBING THE STATE-OF-THE-ART IN ONE (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-666 017 6/5
RAND CORP SANTA MONICA CALIF
PROBLEMS OF DISEASE CLASSIFICATION IN MACHINE
PROCESSABLE FORMAT,
FEB 68 10P LINCOLN, THOMAS L. I
REPT. NO. P-3799

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*DISEASES, CLASSIFICATION),
DIAGNOSIS, DECISION MAKING, MEDICAL PERSONNEL,
DATA PROCESSING SYSTEMS, SEARCH THEORY,
MEDICINE, THERAPY

(U)

THE MEDICAL DILEMMA WITH RESPECT TO MODERN
INFORMATION HANDLING IS DISCUSSED. THIS DILEMMA
RESULTS FROM PROFESSIONAL PHILOSOPHIES WHICH ARE IN
PART OUTMODED AND IN PART OUTSCALED BY THE PRESENT
DEMAND FOR INFORMATION. THE EFFECTIVE MANAGEMENT
OF MEDICAL AND HEALTH DATA, WHICH WILL COME TO DEPEND
ON A VISIBLE PROCESS OF PROBLEM DEFINITION AND
THERAPEUTIC DECISION-MAKING, WILL DEMAND REBLOCKING
AND RESORTING OF INFORMATION. ULTIMATELY, HOWEVER,
THE WAYS IN WHICH DISEASES ARE CATEGORIZED AND THE
ELEMENTS CHOSEN FOR CLINICAL THINKING WILL BE
ALTERED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-666 411 5/9 5/8 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
EXPLORATORY STUDY OF INFORMATION-PROCESSING
PROCEDURES AND COMPUTER-BASED TECHNOLOGY IN
VOCATIONAL COUNSELING.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

OCT 67 245P COGSWELL, JOHN F. I

ESTAVAN, DONALD P. JOONANCE, CLYDE P. , JR. I

KOSENQUIST, BARBARA A. I

REPT. NO. TM-2718

UNCLASSIFIED REPORT

DESCRIPTORS: (•EDUCATION,
PROGRAMMING (COMPUTERS)), DATA PROCESSING
SYSTEMS, STUDENTS, DECISION MAKING, MAN-MACHINE
SYSTEMS, INSTRUCTORS, DESIGN,

ADJUSTMENT (PSYCHOLOGY), PSYCHOMETRICS,
COMPUTER PROGRAMS, INFORMATION RETRIEVAL

(U)

IDENTIFIERS: •COUNSELING

(U)

THE PURPOSE OF THIS PHASE OF THE WORK WAS TO DESIGN
A MAN-MACHINE COUNSELING SYSTEM. BEFORE THE DESIGN
WORK BEGAN, THE COUNSELING AND GUIDANCE OPERATIONS
WERE SURVEYED IN THE THIRTEEN SCHOOLS DISTRIBUTED
OVER SEVEN STATES IN ORDER TO STUDY THE VARIATION IN
COUNSELING PRACTICE AMONG SCHOOLS. THIS VARIATION
COULD THEN BE CONSIDERED IN SYSTEM DEVELOPMENT WORK
WITH THE SCHOOLS SELECTED FOR THE MAN-MACHINE STUDY.
AFTER THE SURVEY, AN EXPERIMENTATION FIELD SITE WAS
SELECTED. THE FOCUS OF SYSTEM DEVELOPMENT AND
EXPERIMENTATION IS A LARGE SCHOOL COMPLEX IN THE
LOS ANGELES SCHOOL DISTRICT. DETAILED
SYSTEM ANALYSIS WAS PERFORMED OF ALL THE COUNSELING
PROCEDURES EMPLOYED IN THIS SCHOOL COMPLEX AND
WORKSHOPS ON INFORMATION PROCESSING TECHNOLOGY WERE
CONDUCTED FOR THE COUNSELORS. TWO DESIGN TEAMS
WERE THEN FORMED TO SPECIFY MODEL I OF THE MAN-
MACHINE SYSTEM. ONE TEAM CONSISTED OF THE SOC
RESEARCHERS AND THE HIGH SCHOOL COUNSELORS; THE
OTHER, OF THE RESEARCHERS AND THE JUNIOR HIGH SCHOOL
COUNSELORS. SOME OF THE MAJOR IDEAS WHICH EMERGED
FROM THE DESIGN SESSIONS ARE: (1) AN
INFORMATION RETRIEVAL SYSTEM FOR STUDENT INFORMATION.
(2) A TRACKING AND MONITORING SYSTEM WHICH WILL
AUTOMATICALLY ALERT THE COUNSELOR WHEN CRITICAL
SITUATIONS OCCUR. (3) AUTOMATED REPORT
GENERATION FOR PREPARING CUMULATIVE RECORDS, REPORT
CARDS, AND OTHER REPORTS OR LISTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-668 180 1977 5/10
CALIFORNIA UNIV LOS ANGELES BIOTECHNOLOGY LAB
UNDERWATER WORK MEASUREMENT TECHNIQUES: INITIAL
STUDIES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 68 105P WELTHAN, GERSHON I
EGSTROM, GLEN H. ILLIOTT, ROBERT E. I
STEVENSON, HERBERT S. I
REPT. NO. TR-44, 68-11
CONTRACT: N00014-67-A-0111
PROJ: NR-196-069

UNCLASSIFIED REPORT

DESCRIPTORS: (•PERFORMANCE(HUMAN)),
UNDERWATER), (•DIVING,
PERFORMANCE(HUMAN)), BIOMETRY, DATA
PROCESSING SYSTEMS, EFFECTIVENESS, CONSTRUCTION,
MODELS(SIMULATIONS), RESEARCH PROGRAM
ADMINISTRATION, TEST METHODS, CLASSIFICATION,
CLOSED CIRCUIT TELEVISION, RECORDING SYSTEMS,
ARMS, LEGS, STRESS(PHYSIOLOGY),
RESPIRATION, ELECTROCARDIOGRAPHY, SPACE
ENVIRONMENTAL CONDITIONS, STRESS(PSYCHOLOGY),
OCEAN BOTTOM, TABLES
IDENTIFIERS: WORK MEASUREMENT(UNDERWATER),
GRAPHS(CHARTS)

(U)

(U)

THE REPORT REVIEWS INITIAL PROGRESS IN AN ONGOING
STUDY OF UNDERWATER WORK MEASUREMENT. THE
OBJECTIVE OF THE STUDY IS TO DETERMINE NEW WAYS OF
DEFINING AND MEASURING DIVER WORK EFFECTIVENESS, AND
TO DEVELOP MEASUREMENT TECHNIQUES FOR GENERAL
APPLICATION IN RESEARCH AND OPERATIONAL PROGRAMS.
EXAMINATION OF MEASUREMENT TECHNIQUES WAS DIVIDED
INTO THREE MAIN AREAS: PROCEDURAL, PHYSIOLOGICAL
AND PSYCHOLOGICAL. THE REPORT DESCRIBES THE
DEVELOPMENT OF A PIPE CONSTRUCTION TASK AND A
LABORATORY BIOINSTRUMENTATION SYSTEM. IN ADDITION,
IT PRESENTS THE RESULTS OF A SERIES OF SUB-STUDIES
DEALING WITH WORK METHODOLOGY AND PHYSIOLOGICAL
RESPONSE UNDERWATER. THE STUDIES WERE CONDUCTED IN
THE DIVING TANK OF THE UCLA UNDERWATER RESEARCH
FACILITY. A SUMMARY OF FINDINGS AND
RECOMMENDATIONS IS INCLUDED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-646 309 9/2 20/1
ILLINOIS UNIV URBANA BIOLOGICAL COMPUTER LAB
A DIGITAL COMPUTER FOR THE ELECTRONIC MUSIC
STUDIO.

(U)

JAN 67 10P FREEDMAN, M. DAVID I
REPT. NO. PUBL-143
CONTRACT: AF-AFOSR-7-66
PROJ: AF-9769
TASK: 976904
MONITOR: AFOSR 68-0776

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN JOURNAL OF THE AUDIO
ENGINEERING SOCIETY, V15 N1 JAN 1967.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH BENDIX
RESEARCH LABS., SOUTHFIELD, MICH.

DESCRIPTORS: (MUSIC, *DIGITAL COMPUTERS),
DATA PROCESSING SYSTEMS, DATA STORAGE SYSTEMS,
INPUT-OUTPUT DEVICES, MAGNETIC TAPE, ANALOG-TO-
DIGITAL CONVERTERS, SOUND, SYNTHESIS, REAL TIME,
ACOUSTICS

(U)

RECENT ADVANCES IN COMPUTER TECHNOLOGY HAVE MADE IT
FEASIBLE TO USE DIGITAL COMPUTERS AS MUSICAL
INSTRUMENTS. THIS PAPER PRESENTS A SET OF
SPECIFICATIONS FOR A DIGITAL COMPUTER SYSTEM WHICH
CAN BE USED FOR THE ANALYSIS, SYNTHESIS AND EDITING
OF MUSIC. DETAILS ARE PRESENTED FOR SEVERAL MUSIC
SYNTHESIS SCHEMES, AND THE POSSIBILITY OF REALIZING
THESE SCHEMES IN REAL TIME IS INVESTIGATED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000390

AD-668 626 6/2 7/2
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB
OHIO
REAL-TIME DIGITAL ANALYSIS SYSTEM FOR BIOLOGICAL
DATA. (U)
66 6F MUNDIE, J. RYLAND I
OESTREICHER, H. L. VON GIERKE, H. E. I

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN IEEE SPECTRUM, P116-21
OCT 1966.

DESCRIPTORS: (DATA PROCESSING SYSTEMS,
BIOLOGY), DIGITAL COMPUTERS, BIOLOGICAL
LABORATORIES, REAL TIME, REMOTE CONTROL SYSTEMS,
DISPLAY SYSTEMS, ANALOG-TO-DIGITAL CONVERTERS,
MULTIPLEX, NERVOUS SYSTEM, NERVE CELLS (U)
IDENTIFIERS: ON-LINE SYSTEMS (U)

IN THE SYSTEM DESCRIBED, A MEDIUM-SIZE DIGITAL
COMPUTER HAS BEEN BROUGHT INTO THE LABORATORY AND
MADE AN INTEGRAL PART OF THE EXPERIMENT TO PROVIDE A
MEASUREMENT TOOL WITH UNIQUE CAPABILITIES.
ALTHOUGH THE SYSTEM WAS DESIGNED FOR USE IN A
BIOLOGICAL LABORATORY, IT IS EQUALLY FEASIBLE FOR A
LABORATORY OF ANY DISCIPLINE. THE EASE OF CONTROL,
COUPLED WITH A VISUAL DISPLAY OF THE COMPUTED
RESULTS, HAVE LED TO THE APPELLATION, A 'THIRD
GENERATION' OSCILLOSCOPE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000290

AD-668 627 6/3 12/1
RAND CORP SANTA MONICA CALIF
MATHEMATICAL EXPERIMENTATION AND BIOLOGICAL
RESEARCH, (U)
MAY 61 15P BELLMAN, RICHARD I
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UNCLASSIFIED REPORT
AVAILABILITY: TO BE PUBLISHED IN THE PROCEEDINGS OF
THE ATLANTIC CITY SYMPOSIUM ON MATHEMATICAL
METHODS IN BIOLOGY AND MEDICINE.

DESCRIPTORS: (BIOLOGY, MATHEMATICAL MODELS),
(MEDICAL RESEARCH, MATHEMATICAL MODELS),
PROBLEM SOLVING, MATHEMATICAL ANALYSIS, DIGITAL
COMPUTERS, THEORY, CHEMOTHERAPY, EXPERIMENTAL
DESIGN (U)

THE POSSIBILITY OF THE APPLICATION OF MATHEMATICAL
TECHNIQUES TO THE BIOMEDICAL RESEARCH FIELD IS
DISCUSSED. A GREAT DEAL HAS BEEN GAINED FROM THIS
IN THE PAST AND THE INTRODUCTION OF THE DIGITAL
COMPUTER GREATLY INCREASES THE PROMISE OF THE FUTURE.
ONE OF THE FUNCTIONS OF THE MATHEMATICIAN
INTERESTED IN THE AREAS OF BIOLOGY AND MEDICINE IS TO
PROVE THAT THERE ARE SIGNIFICANT AND INTRIGUING
MATHEMATICAL QUESTIONS IN THESE NEW FIELDS AND BY
EXAMPLE TO SHOW THE BIOLOGIST AND MEDICAL RESEARCHER
THAT HE CAN CONTRIBUTE TO THEIR PROBLEMS.
(AUTHOR) (U)

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AD-669 072 6/1
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB
OHIO
AUTOMATED TRIHYDROXYINDOLE PROCEDURE FOR ANALYSIS OF
EPINEPHRINE AND NOREPINEPHRINE. (U)
DESCRIPTIVE NOTE: FINAL REPT. JUN 65-FEB 67,
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DESCRIPTORS: (AMINES, CHEMICAL ANALYSIS),
EPINEPHRINE, LEVARTERENOL, INSTRUMENTATION,
AUTOMATION, EXCRETION, URINE, PUBLIC HEALTH,
MEDICAL EXAMINATION, FLUOROMETERS, DATA
PROCESSING SYSTEMS (U)
IDENTIFIERS: TRIHYDROXYINDOLE (U)

A TRIHYDROXYINDOLE PROCEDURE FOR THE FLUOROMETRIC ANALYSIS OF EPINEPHRINE AND NOREPINEPHRINE IN URINE HAS BEEN ADAPTED TO THE TECHNICON AUTOANALYZER. MODIFICATIONS OF THE ORIGINAL METHOD OF ROBINSON AND WATTS INCLUDE: (1) THE USE OF AN ALKALINE SODIUM ACETATE BUFFER IN THE COLUMN WASH, AND (2) SUBSTITUTION OF 0.1N SODIUM ACETATE PH 6.0 IN THE DILUENT STREAM OF THE AUTOANALYZER. TWENTY-FOUR HR URINE SPECIMENS FROM 10 NORMAL SUBJECTS WERE ANALYZED, GIVING VALUES OF NOREPINEPHRINE 29.4 MICROGRAMS PLUS OR MINUS 8.1 (STANDARD DEVIATION) 24 HRS, EPINEPHRINE 6.6 PLUS OR MINUS 2.5 AND TOTAL CATECHOLAMINES 36 PLUS OR MINUS 10.7. REPEATABILITY OF 10 ALIQUOTS OF A SINGLE SPECIMEN WAS 32.8 PLUS OR MINUS 1.7 STANDARD DEVIATIONS (PLUS OR MINUS 5%) FOR NOREPINEPHRINE, 9.3 PLUS OR MINUS 0.7 STANDARD DEVIATIONS (PLUS OR MINUS 7%) FOR EPINEPHRINE AND 42.1 PLUS OR MINUS 1.6 (PLUS OR MINUS 4%) FOR THE TOTAL CATECHOLAMINES. REPRODUCIBILITIES OF DUPLICATE ALIQUOTS OF A SINGLE SPECIMEN ANALYZED ON 3 DIFFERENT DAYS WERE 26.1 MICROGRAMS PLUS OR MINUS 2.3 (PLUS OR MINUS 9%) FOR NOREPINEPHRINE AND 6.9 PLUS OR MINUS 0.9 (PLUS OR MINUS 11%) FOR EPINEPHRINE AND 33.6 PLUS OR MINUS 1.5 (PLUS OR MINUS 4%) FOR THE TOTAL CATECHOLAMINES. INTERFERENCE BETWEEN LARGE AND SMALL KNOWN SAMPLES RUN SEQUENTIALLY IN THE ANALYZER WAS NOT SEEN. RECOVERIES OF COLUMBED ALIQUOTS WAS 93 PLUS OR MINUS 5.4% FOR NOREPINEPHRINE, 75 PLUS OR MINUS 5% FOR EPINEPHRINE AND 79 PLUS OR MINUS 4.6% FOR THE TOTAL CATECHOLAMINES. AUTOMATION OF THE ANALYSIS AND DIGITAL COMPUTER COMPUTATION OF THE (U)

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AD-800 414 6/5
STANFORD MEDICAL CENTER PALO ALTO CALIF
METABOLIC EFFECTS OF BLOOD TRANSFUSION. (U)
DESCRIPTIVE NOTE: PROGRESS REPT. 1 JUL 63-30 JUN 66,
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CONTRACT: DA-49-193-MD-2135

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WASHINGTON, D. C. 20315. ATTN: MEDDH/RS.

DESCRIPTORS: (BLOOD TRANSFUSIONS, METABOLISM),
SYMPATHOLYTIC AGENTS, DOGS, ACIDOSIS, DRUGS,
BLOOD CIRCULATION, PARENTERAL INFUSIONS,
CITRATES, DIGITAL COMPUTERS, SPECTRUM ANALYZERS,
ELECTROCARDIOGRAPHY, CORRELATION TECHNIQUES,
HUMANS (U)

THE COMPENSATORY MECHANISMS INVOLVED IN CITRATE-
INDUCED HYPOCALCEMIA WERE EXAMINED IN DOGS. BETA-
ADRENERGIC BLOCKADE PRODUCED A MARKED SENSITIVITY TO
CHELATION OF CALCIUM ION, WHILE ALPHA-ADRENERGIC
BLOCK DID NOT AFFECT THE RESPONSE TO CITRATE
INFUSION. IN ADDITION, TWO OUT OF FIVE DOGS SHOWED
INCREASED SENSITIVITY TO CITRATE INFUSION 7-10 DAYS
FOLLOWING CARDIAC AUTOTRANSPLANTATION. THE RESULT
MAY BE EXPLAINED BY 1) DECREASED RENAL EXCRETION OF
CITRATE OR 2) MYOCARDIAL CATECHOLAMINE DEPLETION.
IN THE ISOLATED GUINEA PIG ATRIUM (ISOTONIC
CONTRACTIONS) WE HAVE DEMONSTRATED THAT PENTOBARBITAL
AND INCREASED POTASSIUM ACT ANTAGONISTICALLY. BY
USING THREE DIMENSIONAL ISOBOLOGRAMS, WE HAVE SHOWN
THAT EDTA, POTASSIUM, AND PENTOBARBITAL ACT
SYNERGISTICALLY TO DEPRESS THE MYOCARDIUM. THE
MYOCARDIAL RESISTANCE TO METABOLIC ACIDOSIS,
PREVIOUSLY NOTED IN DOGS, HAS BEEN CONFIRMED IN
ISOLATED GUINEA PIG ATRIA. THE ANALOG COMPUTER
SOLUTION OF THE STARR BALLISTIC FORMULA FOR STROKE
VOLUME HAS BECOME OPERATIONAL. AN ADDITIONAL
PROGRAM FOR SIMULTANEOUSLY COMPUTING HEART RATE,
CARDIAC OUTPUT, LEFT VENTRICULAR MINUTE WORK, AND
TOTAL PERIPHERAL RESISTANCE HAS BEEN ADDED. WE
HAVE BEGUN TO STUDY IN CONSCIOUS VOLUNTEER SUBJECTS,
DRUGS WHICH ARE EMPLOYED DURING SHOCK AND MASSIVE
TRANSFUSIONS. THE DRUGS INVESTIGATED INITIALLY
WERE METHOXAMINE, MEPHENTERMINE, AND ATROPINE.
STRIKING DELETERIOUS CHANGES WERE NOTED WITH
METHOXAMINE, CHANGES WHICH WOULD HAVE BEEN MISSED
WITH ORDINARY METHODS OF DETERMINING CARDIAC OUTPUT.
(AUTHOR) (U)

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